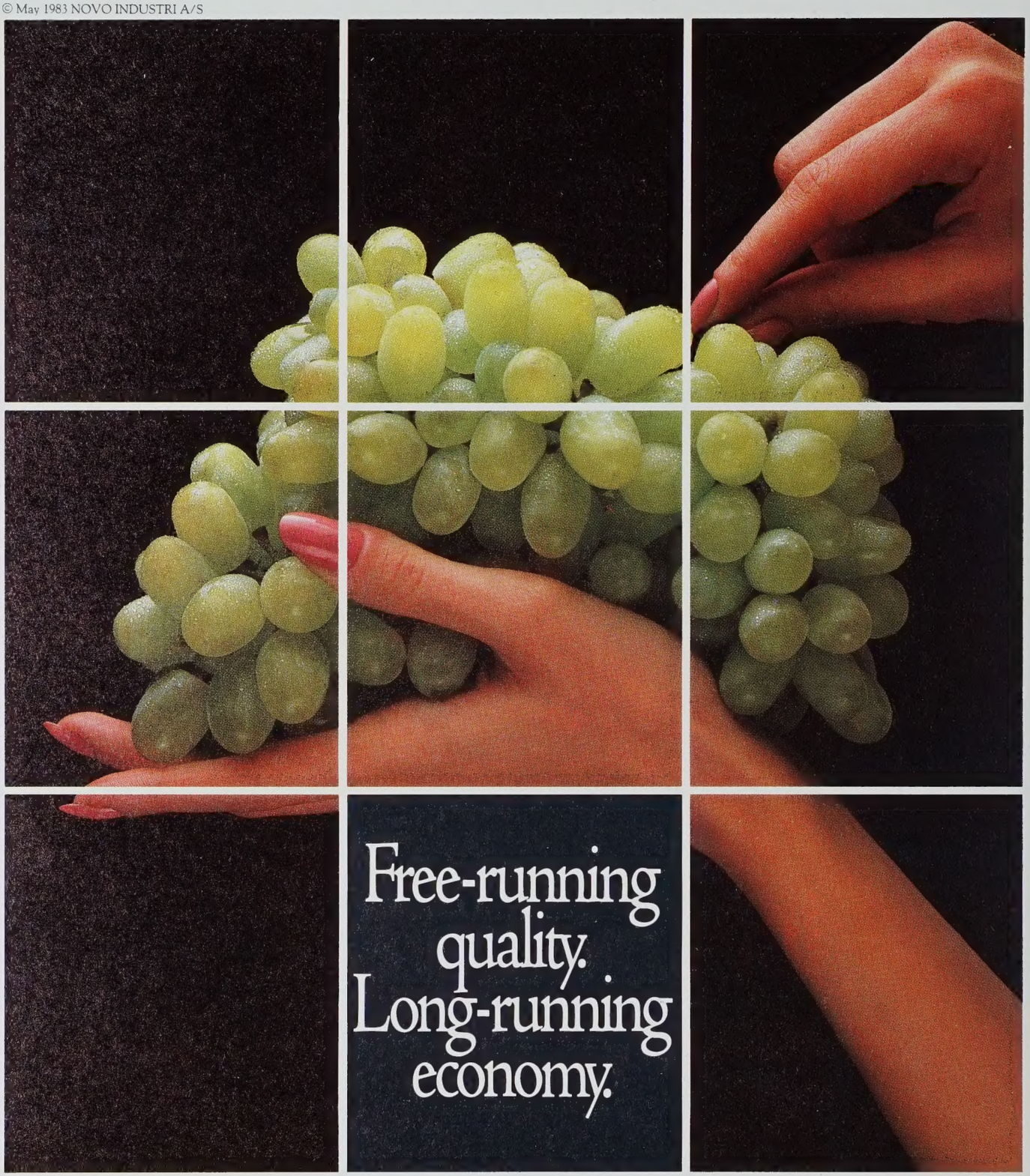
The Winemaking Review
JULY/AUGUST 1983

PRACTICAL WINERY

Featured Varietal: Gewürztraminer

RIESLING: Grape Varieties and Wine Styles
by Walter Schug

© May 1983 NOVO INDUSTRI A/S



Novo keeps your wine business fruitful with enzymes that help realize the full potential of your grapes. And the full market value of your wine. And we do this while safeguarding quality and color.

Just as you grow special grapes for different wines, our enzymes are shaped to perform specific functions. They can increase the free-run yield. And this greater quantity directly yields bigger profits. Plus Novo technology adds more profit cultivating factors such as improved clarity. . . and that means better centrifugation and filtration.

Novo has the enzymes, the experience and the research facilities to back them up. They help you achieve better quality and greater profitability.

NOVO

Worldwide leader in the field of industrial enzymology.

NOVO LABORATORIES, INC., 59 Danbury Road, Wilton, CT 06897, (203) 762-2401
A Subsidiary of NOVO INDUSTRI A/S, Denmark

Distributed by: Cellulo Co. and its Finer Filter Products Division
Western U.S.: 124 M Street, Fresno, CA 93721, (209) 485-2692
Eastern U.S.: 27 North Avenue East, Cranford, NJ 07016, (201) 272-9400

Circle No. 137 on Reader Service Card

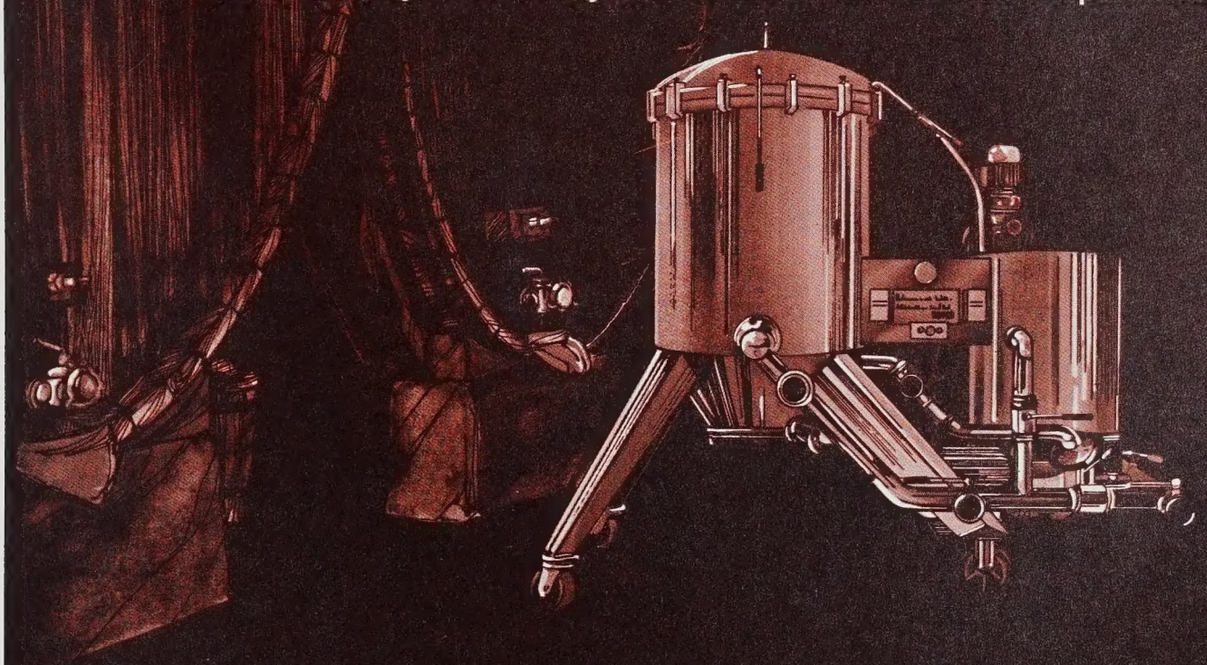
Know us for corks? A lot of customers rely on us for FILTERS, too.

VELO

SUPERFILTER

Designed simply to last longer, filter better, save you time and money.

Beautifully engineered of stainless steel, the VELO is a complete and versatile D.E. filtration station — yet priced *very* competitively. Fast to start up, easy to clean, suitable for both wine and juice. Available in eleven models, for both wet and dry cake discharge. Over 60 units sold in the last 3 years, all backed (of course) by Scott's 50 years of service. Call or mail coupon below.



SCOTT LABORATORIES

Serving Wine Since 1933

Scott Laboratories, Inc.
P. O. Box 9167, San Rafael, CA 94912
(415) 457-8460
Telex — 171494 Scoti SRFL

Scott Laboratories, Ltd.
950 Brock Road South
Pickering, Ontario, Canada LIW2A1
(416) 839-9463
Telex — 06-981445 Scottlab PICK

OK, Scott, I'm interested.

NAME _____

FIRM _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE _____ (OPTIONAL)

- ☐ Send color brochure and technical data on VELO SUPERFILTER
- ☐ Call for appointment

I'm also interested in:

- ☐ Winemaking Supplies and Winery Equipment
- ☐ Corks, Bottling & Packaging
- ☐ Laboratory Analysis & Consultation
- ☐ Laboratory Equipment

Circle No. 144 on Reader Service Card

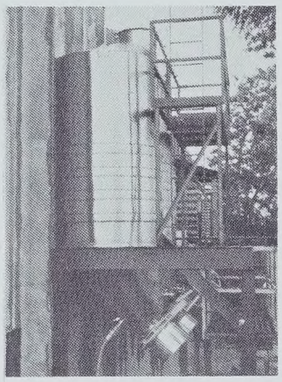
JV NORTHWEST ENGINEERING

18088 SW LOWER BOONES FERRY ROAD
PORTLAND, OREGON 97223

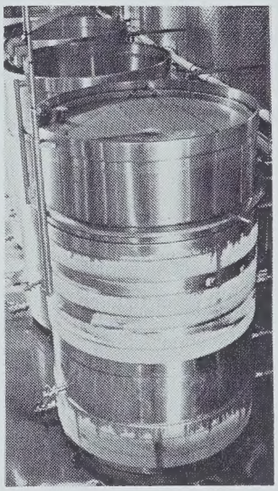
(503) 684-1490

STAINLESS STEEL TANKS FOR THE WINE INDUSTRY

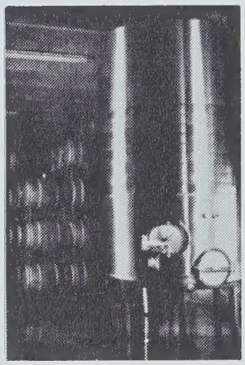
F.W. LANGGUTH WINERY
WASHINGTON



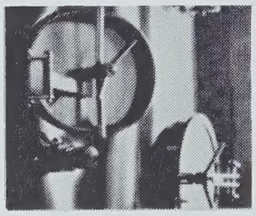
DRAINER TANKS
SOKOL BLOSSER WINERY
OREGON



VARIABLE CAPACITY TANK
RIDGE VINEYARDS
CALIFORNIA



CHATEAU BENOIT
OREGON



DUAL ACTION
IN-SWING MANHOLE
DOORS

- INVISIBLE INSIDE SEAMS
- ALCOVES—MANHOLES—SPECIAL FITTINGS AND VALVES TO MEET YOUR NEEDS
- CLOSED SYSTEM COOLING JACKETS
- J.V. DESIGNED VARIABLE CAPACITY OR "FLOATING LID" TANK AVAILABLE
- SUPERIOR M.I.G. CONTINUOUS MACHINE WELDS
- RADIUS CORNERS FOR STRENGTH AND EASY CLEANING

Floating Lid demonstration tank—Booth #196

Circle No. 124 on Reader Service Card

Dear Editor:

Congratulations on your impressive May/June issue. However, the article on whole cluster pressing at Concannon contains some statements that perhaps may leave your readers with a mistaken impression of winemaking at Sterling.

Statements in question are: "While at Sterling, Traverso didn't have the option of whole cluster pressing and Sauvignon Blanc grapes were brought in from different vineyards with different soils. Thus, it was not possible to find out about each soil and micro-climate and assess the effect they had on the resulting wine."

That there is not the option of bypassing the crusher at Sterling is merely due to the fact that this technique has never been proposed at Sterling. Any implication that winemaking options are hindered at Sterling by inability to modify equipment is unfair to our management, whose willingness to invest in equipment to maximize quality is perhaps best illustrated in our fermentation area.

Sauvignon Blanc winemaking procedures have followed, rather closely over the years, the techniques common in Graves which result in balanced, long lasting wines. From visits to such Chateaux as Haut Brion, La Mission Haut Brion, and Carbonnieux during this last year, I am quite certain that the whole cluster pressing technique is not common among the truly premier Graves producers.

As to having different Sauvignon Blanc from different soils and being unable to find out about each soil and micro-climate, the truth is quite the opposite. Sterling currently has five different Sauvignon Blanc vineyard locations on hillsides and the valley floor, four of which are in sight of and within one mile of the winery. Planting of Sauvignon Blanc over the years, has been carried out with much consideration of the relationship between soil types and wine characteristics.

One of the strengths of our estate production is certainly that we are able to pick our grapes separately by blocks (blocks having been laid out by soil and micro-climate considerations). We most assuredly do keep these lots separate in order to carefully assess relationships between vineyard location and wine characteristics as well as to maximize blending options.

Bill Dyer
Assistant Winemaker
Sterling Vineyards, Calistoga, CA

The Winemaking Review
PRACTICAL WINERY

JULY/AUGUST 1983 VOLUME IV, NO. 2

FEATURES:

Yeast Buyer's Guide 7
New Filler Valve 11
RIESLING: Grape Varieties and Wine Styles 20
Gewürztraminer 30
Gewürztraminer Winemaking Summary 40
Gewürztraminer Tasting Notes 44
Pressure Leaf Filter Purchasing Guide 55
Hydralobe Pump for Crush and Bottling 61
Autolysis at Vichon Winery 62

DEPARTMENTS:

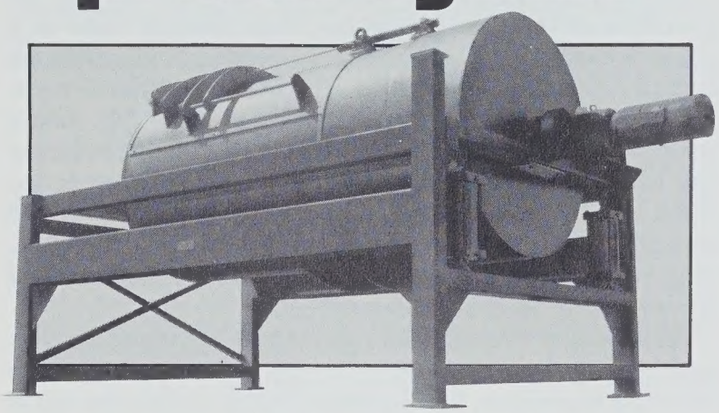
Must to Market 9
Barrels & Wine 12
Quality Approach 15
In The Cellar With Jake Lorenzo 17
The Wine Lawyer 18
PRACTICAL WINERY Library 64
Index of Advertisers 66
Reader Response Card 66
Services For The Winemaker 67

COVER PHOTO: Ripe Gewürztraminer grapes in the Hinzerling Vineyard, Prosser, Washington.

Editor and Publisher Don Neel
Writing Staff: Don Blackburn, Scott Clemens, Nancy Lynn Gray, Denis Kelly, Jake Lorenzo, Don Neel, Bruce Rector, Gerald Weis
Production Staff: Gail Jackson, Anne Murphy
National Advertising Manager: Diana Jean Clardy
Circulation Manager Frank Neel

Practical Winery is published bi-monthly by Don Neel and Associates. Editorial Business offices: 15 Grande Paseo, San Rafael, CA 94903 (415) 479-5819. Subscription Rate: $20/year. Outside the United States, please add $8/year. News media may use no more than one quarter page of material per issue provided that Practical Winery is credited.

You'll have to go a long way to find a shorter press cycle!



The new Valley Diaphragm Tank Press with programmable controller, extra large screen area and two-way tilting capability.

With a completely programmable controller, a screen that covers virtually half of the tank and a two-way tilting capability, our new stainless steel Diaphragm Tank Press offers the shortest press cycle we know of . . . a mere 60 to 90 minutes long!

With a Valley Diaphragm Tank Press you'll have electronic control over every sequence of the press cycle, and because of the extra large screen area, you'll be able to handle more product faster and more efficiently. With our tilting feature the press can tip from end to end for rapid filling and discharge.

The screen is a self-cleaning bar type that reduces pomace sticking and helps to maintain better juice quality. Because a stainless steel rotary joint allows discharge through the center of the head, juice does not splash into a pan, thus oxidation is minimized.

Available as an option is a large-diameter inlet with rotary joint that makes it possible to pump must directly into the press. Five different sizes of the Valley Diaphragm Tank Press are offered with capacities from 5 tons to 25 tons.

For more information on our new Diaphragm Tank Press, simply call Valley Foundry or write to us.

Call us for Crushers (1½ to 120 tons an hour) . . . and Pumps (3 to 30 hp.)!

Made in America for American vintners since 1898.

VALLEY FOUNDRY & MACHINE WORKS
A Division of AMETEK
P.O. Box 1626 • Fresno, CA 93717 • (209) 233-6135

Yes, I'd like a Valley Foundry Catalog!
Please send me your latest Winery Equipment Catalog.
Name _____
Title _____
Company _____
Address _____
City _____ State _____ Zip _____
Telephone _____
Mail To: Valley Foundry, P.O. Box 1626, Fresno, CA 93717

Dear Editor:

Thanks for republishing Mr. T.J. John's excellent article "Sterile Filter Myths and Fables". The main thrust of his article, that in a winery operation, all components of a system should be examined before any single component is blamed, is vital and applies in more areas than just filtration.

Despite the fact that some of the data do not represent figures we have found for North American wines, I sincerely recommend the article to everyone. Mr. John's breakdown for infections represents German results.

Properly sterilized corks have been used in Germany for a number of years, so he has not listed infected corks as a cause. In North America, laboratory proven sterile corks are a relatively recent innovation. Thus, results differ.

A comment, from my perspective, on all of Mr. John's various points may be valuable. Seitz Werke has a laboratory and furnishes advisory services to the wine industry in the Nahe region of Germany. My company has performed similar services for North American wineries since 1933, originally under the name of Berkeley Yeast Laboratory and more recently as Scott Laboratories.

As with Seitz Werke, Scott Laboratories has manufactured, sold and serviced filter sheets for more than 25 years. It is from this experience, that I want to briefly discuss the myths presented in Mr. John's article:

Myth #1: *'I have yeast in my bottled wine, so my sterile filters are no good.'*

Mr. John is correct. This simplistic account is **wrong.** Despite this, over the years, we estimate that 30-40% of infections resulted from a failure of the final filtration system as its basic cause. Membranes can rupture after bubble testing, membrane cartridges can be defective on receipt and not bubble tested, filter sheets can be damaged by cracking or even having a hole punched in them by a sloppy filter man; internally ported filters can by-pass, etc.

50-60% of the problems have been caused by improper sterilization and thus re-infection at some point in the wine line downstream from the sterile filter.

Approximately 7% of the infections have come from infected corks. Where corks have been properly sterilized, laboratory checked and kept sterile, this factor is non-existent.

The final 2-10% comes from all other sources. This includes unfiltered air in the bottling hall, organisms carried in by workmen from outside, infected glass, etc. This figure is at the high end when wineries are in or near vineyards and air for the bottling room is not properly filtered. It is at the low end where all logical precautions are religiously observed.

Myth #2: *'Steam Sterilization of my equipment is too time consuming and difficult. I'll use a chemical sterilant which will work just as well.'*

Mr. John is absolutely correct that 'there are no short cuts to sterility. Steam or hot water sterilization of equipment has proven to be the only safe method...' For a number of reasons we are partial to hot water over steam. Chemical cleaners are valuable in removing soil and chemical sterilants have a place in sanitizing cork jaws, filler spouts and bells, and external spills during the day's operations.

Myth #3: *'Membranes are more economical than sheets because of their longer service life.'*

It is our opinion that membranes can be useful insurance policies but only if all of the filtration work has been previously provided and only if the membranes are regularly bubble tested in place to prove their integrity. Unfortunately, this procedure cannot be used with filter sheets.

Mr. John expressed concern over the possibility of microorganisms growing through membranes. This can happen, but we recommend that where membranes are used for prolonged periods, that the hot water sterilant enter the system upstream from the membrane and discharge at and around the filler heads.

I recognize that such procedure is not applicable for all membranes and those which can be heat sterilized have a shortened life expectancy. But again, using Mr. John's words, 'there are no short cuts'.

Fable #1: *'Two wrongs will make a right.'*

To Mr. John's comments—AMEN!

Fable #2: *'All sins can be redeemed with membranes'.*

I fear that we are not as pessimistic about membranes as Mr. John. When membranes are properly bubble tested, the maximum pore size can be determined. The spread in pore size, which Mr. John refers to, ranges from that size to smaller. This wide difference of ranges can have a marked effect on the life expectancy of the membrane. Some manufacturers put out appreciably better products in this regard than others.

The important thing to remember is that membranes are only screen-filters, and that all of the work must be done before-hand. Filter sheets do an excellent job for this function.

Very truly yours,

Robert S. Scott
Scott Laboratories, Inc.
PO Box 9167
San Rafael, CA 94912

Without your label it's only wine

You make wine; we make labels.
Together we make a difference.

BLAKE PRINTERY

Call or write for a brochure
2222 Beebee Street • San Luis Obispo, California 93401
In California Call Toll Free 800-792-6946
Outside California 805-543-6843

Circle No. 109 on Reader Service Card

YEAST BUYER'S GUIDE

CELLULO COMPANY,
Finer Filter Products Division
Active Dry Yeast

Manufacturer: Red Star-*1 kg tin, 10 kg pkg (See Red Star product information for more details)*
MONTRACHET, UCD 522
PASTEUR CHAMPAGNE, UCD 595
CALIFORNIA CHAMPAGNE, UCD 505
FLOR SHERRY, UCD 519
EPERNAY 2, Geisenheim Research Institute
Yeast Nutrient-*25 lb*

THE COMPLEAT WINEMAKER
Active Dry Yeast

Manufacturer: Red Star *(See Red Star product information for more details)*
MONTRACHET
PASTEUR CHAMPAGNE
Available in 5 gram packets, 75-5 gram packets, 1 KG tin, 10 kg box.
EPERNAY 2, *Available in 1 KG tin*
Manufacturer: Fermivin
FERMIVIN, *Available in 450 gm or 10 kilo package*
Yeast Nutrient, *Available in vial of 15 tablets, 1/4 lb bottle (200 tablets), 5 lb bottle, or 25 lbs.*

CRIVELLER COMPANY

Offers granular yeast in vacuum bags of 1/2 kg in stock.
ZYMASIL (*Saccharomyces cerevisiae*)
For fermentation of grape juices and grape dregs. Dosage-regular use: 5-10 gr/hl; hard fermentation: 20-40 gr/hl.
ZYMASIL BAYANUS (*Saccharomyces bayanus*)
For fine wine making, sparkling wine fermentation (Charmat method), and bottle fermentation (Champenoise method). Dosage- fine wines: 10-20 gr/hl; Charmat or Champenoise: 20-40 gr/hl; Stuck fermentation: 30-50 gr/hl.

ENOLOGICAL TECHNICAL SERVICE
Yeast Cultures

Offered in liquid media; 1 liter, order time: 4 days prior to pickup or shipping date.
ASSMANSHAUSEN, UCD 679
BURGUNDY, *(Saccharomyces cerevisiae),* UCD 51
CHAMPAGNE, (*Saccharomyces bayanus*), UCD 505
UCD 595, (*Saccharomyces bayanus*), Institute Pasteur
EPERNAY, (*Saccharomyces cerevisiae*), UCD 585
MONTRACHET, (*Saccharomyces cerevisiae*), UCD 522
STEINBERG, (*Saccharomyces cerevisiae*), UCD 529
FRENCH WHITE, Institute Pasteur
FRENCH RED, Institute Pasteur
PRISE DE MOUSSE, Institute Pasteur, UCD 594
Yeast Nutrient, Red Star, *1 kg pkg.*

Active Dry Yeast

Manufacturer: Red Star-1 kg tin
See Red Star (mfr) product information for more details.
PASTEUR CHAMPAGNE, (*Saccharomyces bayanus*), UCD 595
MONTRACHET, (*Saccharomyces cerevisiae*), UCD 522
EPERNAY 2, (*Saccharomyces cerevisiae*), Geisenheim

Malolactic Bacteria Culture

Offered in liquid media; 1 liter, order time: 4 days prior to pickup or shipping date.
ML 34, (*Leuconostoc oenos*)
PSU-1, (*Leuconostoc oenos*)
ETS invites inquiries on cultures not listed.

GREAT WESTERN CHEMICAL COMPANY
Active Dry Yeast

Manufacturer: Red Star *(See Red Star product information for more details)*
PASTEUR CHAMPAGNE *(Saccharomyces bayanus),* UCD 595
MONTRACHET *(Saccharomyces cerevisiae),* UCD 522
Pasteur Champagne or Montrachet available in 12X 1 kg case or 10 kg box.
CALIFORNIA CHAMPAGNE *(Saccharomyces bayanus),* UCD 505
EPERNAY 2 *(Saccharomyces cerevisiae),* Geisenheim
California Champagne or Epernay 2 available in 12X 1 kg case
Manufacturer: Fermivin
FERMIVIN, *Available in 10 kg pkg.*
Yeast Nutrient, Red Star Yeast Autolysate-*25 lb. pkg. or 100 lb. drum*

MOFFET CO., INC.

Offers yeast in active dry form, manufactured by Laboratoires Oeno-France; 1 KG tin (Recommendation: place order 6-8 weeks in advance.)
LEVULINE ALSACE
For low temperature fermentations, to cure stuck fermentations; for low volatile acids, acetaldehyde and SO_2; complete fermentation. Dosage-white must: 10-20 grams/100*l*; red vintage: 20 grams/100*l*.
Special Yeast for Methode Champenoise developed by the Comite Interprofessional des vins de Champagne.

SCOTT LABORATORIES, INC.
VI-A-DRY™ YEASTS

MONTRACHET (*Saccharomyces cerevisiae*), UCD 522
Fast, reliable, low cost fermentation.
CHAMPAGNE (*Saccharomyces bayanus*), UCD 595
Clean fermentation, low H_2S, excellent secondary fermentation.
Montrachet or Champagne available in 12.5 kg Fiber Drum or 500 gram tin.
PRISE DE MOUSSE (*Saccharomyces bayanus*), aka Epernay from l'Institut Oenologique de Champagne.
Very viable, hardy, fast pressure build-up to 6 atmospheres, ferments well at low temperature (to 10°C), flocculates well.
K-1 (*Saccharomyces cerevisiae*), from Universite de Montpelier
Fast starting, extremely resistant and hardy, ferments under most difficult conditions including stuck fermentations.
WADENSWILL (*Saccharomyces cerevisiae*), from Swiss Nat'l Agricultural Station, Wadenswill.
Slow, non-foaming fermentation, extremely low H_2S, assists M-L fermentation, good to 35°C.
Prise de Mousse, K-1, and Wadenswill available in 500 gram tin.

LEUCOSTART™
(leuconostoc oenos)

Pure freeze dried PSU-1 strain. Clean ML fermentations even at low pH.
LS50 (to 5,000 gal US), LS5 (to 500 gal US)

YEAST STRAINS

Available on Agar Slants (1 pint bottle), 7-10 days required to prepare the cultures for shipment.

STRAIN	SUGGESTED USE
Assmanhausen, UCD 679	Cabernet Sauvignon, Pinot Noir, Gamay
Ay Champagne, UCD 503	Champagne
BYL Flor	Flor Sherry
Champagne, UCD 505	Champagne
Distillers	Alcohol, Distilled beverages
Jerez #5, UCD 515	Flor Sherry
Pasteur Red (Bordeaux Red)	Dry Red, Cabernet, Merlot, Gamay, Zinfandel
Rhine, UCD 526	Dry White
Steinberg, UCD 529	Gewürztraminer, Johannisberg Riesling
Tokay, UCD 530	Dessert Wine
#519 Flor, UCD 519	Flor Sherry
Zinfandel	Dry Red

SWK MACHINES, INC.

Offers yeast-granulated, dry, pure culture, 100 or 500 grams packed in inert gas, manufactured by Erbsloh & Co., Geisenheim/Rheinghau.
HEFIX 1000, strain LW-178-91 *(Saccharomyces cerevisiae)*
For neutral character (i.e., let the grapes determine the wine's organoleptic qualities), for complete fermentation at low temperature, and inoculation at very low temperature. Dosage: 7- 10 gram/100*l* or 260-380 gram/1,000 gal.
HEFIX 2000, strain LW-185-25, (*Saccharomyces bayanus*)
For low temperature fermentations, low acetaldehyde and SO_2 formation, and inoculation at very low temperature. Dosage: 7-10 gram/100*l* or 260-380 gram/1,000 gal.

2K PACKAGING ENTERPRISES, INC.
Active Dry Yeast

Manufacturer: SIHA GmbH, from Institute for Microbiology, Technical University of Darmstadt, Fed. Republic of Germany.
SIHA-1 (*Saccharomyces cerevisiae*)
For high ethanol yield, suppression of off-flavors.

SIHA-2 (*Saccharomyces bayanus*)
For champagne and sparkling wines, fermentation at high alcohol concentrations, and completion of stuck fermentations.
SIHA-3 (*Saccharomyces cerevisiae*), Strain ET 136
For reliable and sensorially pure fermentation.
Available in 500 g pkg, 20 x 500 g-pkg's form 10 kg pack.

UNIVERSAL FOODS CORPORATION

Active Dry Wine Yeasts

MONTRACHET (*Saccharomyces cerevisiae*), UCD 522
Vigorous with high SO_2 tolerance and good flavor characteristics for red and white table wines.
PASTEUR CHAMPAGNE (*Saccharomyces bayanus*), Pasteur Institute 'Champagne', UCD 595
Moderately vigorous with high CO_2 and alcohol tolerance for charmat process sparkling wine and stuck fermentations.
Montrachet and Pasteur Champagne available in 5 g envelope, 1 kg tin, 10 kg bag-in-box, 400 lb drum.
CALIFORNIA CHAMPAGNE (*Saccharomyces bayanus*), UCD 505
Slow to moderately vigorous with extremely rapid, compact flocculation. Facilitates riddling of bottle fermented sparkling wine. *Available in 5 g envelope, 1 kg tin, 10 kg bag-in-box.*
EPERNAY 2 (*Saccharomyces cerevisiae*), Geisenheim Research Institute
Slow fermenting, identical to Geisenheim Epernay but produces less foam. A general purpose yeast for table and sparkling wines.
Available in 5 g envelope, 1 kg tin, 10 kg bag-in-box.
FLOR SHERRY (*Saccharomyces fermentati*), UCD 519
High aldehyde production under aerobic fermentation conditions for both surface and submerged culture flor or fino-type sherry.
Available in 5 g envelope, 1 kg tin, 10 kg bag-in-box.

Red Star Yeast Nutrient

Pure yeast in dry powder form that has been autolyzed and pasteurized to produce a high potency nutrient with no fermentation activity. Especially useful for fruit, concentrate, de-sulfited must, sparkling wine and stuck fermentations.
25 lb box is availabe from most winery suppliers and Universal Foods. 100 lb drum available by special order from Universal Foods.

VINQUIRY

Yeast Cultures

Offered in grape juice media, 16 oz bottle, order time: 4 days.

ASSMANSHAUSEN, UCD 679
BURGUNDY, UCD 51
CHAMPAGNE, Institute Pasteur, UCD 595
CHAMPAGNE, California, UCD 505
EPERNAY
FRENCH WHITE, Institute Pasteur
FRENCH RED, Institute Pasteur
MONTRACHET, UCD 522
STEINBERG, UCD 529
STEINBERG, Geisenheim
PRISE DE MOUSSE, UCD 594

Active Dry Yeast

Manufacturer: Red Star-*Available in 1 kg pkg*
See Red Star (mfr) product information for more details.
PASTEUR CHAMPAGNE, UCD 595
CALIFORNIA CHAMPAGNE, UCD 505
MONTRACHET, UCD 522
EPERNAY 2, Geisenheim Research Institute
Yeast Nutrient, Red Star Yeast Autolysate-*1 lb pkg*

Malolactic Bacteria Cultures

ML-34, Liquid Culture, *Available in 16 oz or 32 oz*
Vinquiry invites inquiries on bacteria cultures not listed.

WINE AND THE PEOPLE

Active Dry Yeast

Manufacturer: Red Star (*See Red Star product information for more details.*)
CALIFORNIA CHAMPAGNE
MONTRACHET
PASTEUR CHAMPAGNE
Available in 1 kg tin.
EPERNAY 2, *Available in 5 gram packets.*
Manufacturer: The Fermenter House
STEINBERG
Inquiries are invited on dry yeasts of European manufacture for home application.

Malolactic Bacteria Culture

PSU-1, Leucostart, Freeze Dried, *Available in size 5A, 25, or 50.*

THE WINE LAB

Liquid Yeast Cultures

Available in 1 oz, 2 oz, 4 oz, 8 oz, 16 oz, or 32 oz. Order at least 5 days before shipment date or 3 days before pick-up.
ASSMANSHAUSEN, Geisenheim, Germany
For slow fermentation rate and austere fruitiness, for high-pH red musts.
BEERENAUSLESE, Germany
For grapes infected with botrytis to intensify apricot-honey flavors, fermentation can be arrested by chilling and racking.
CHANSON, France
For even fermentation of Chardonnay, low H_2S production, flocculates well.
ENOLEVURE, Beaujolais, France
For flowery, grapey wines with medium body, its aromatic qualities are suited to carbonic maceration fermentations.
EPERNAY, Geisenheim, via P.S.U.
For slow fermentation, can be arrested by chilling and racking, but may not ferment to dryness in must that is poor in nutrients, such as Chardonnay of certain areas.
ÉTOILE, France-two sources
For sparkling wine, to produce qualities of subdued yeastiness with crispness, flocculates into large chunks.
PASTEUR RED, Pasteur Institute of Paris, a.k.a. Bordeaux Red, French Red
For fast, strong fermentation, not for high-pH must.
PASTEUR WHITE, Pasteur Institute of Paris
Works best at a slow, even temperature, or is a high foamer at warm temperatures, emphasizes acidity and is appropriate for high-pH whites.
ORIGINAL GERMAN STEINBERG, Geisenheim, Germany
For slow, cool, even temperature fermentation, but is cold- tolerant, must be arrested by chilling and SO_2 addition, fining, racking, or centrifugation.
Y.C. ZINFANDEL, vineyard, St. Helena, CA.
For very fast and vigorous fermentation, for encouraging high sugar fermentations toward dryness, because of its tolerance to alcohol, some cooling is recommended at the peak of fermentation.
UCD #51, (Burgundy), U.C. Davis
Might be used for Pinot Noir or Cabernet Sauvignon.
UCD #594 (Prise de Mousse), Pasteur Institute, via U.C. Davis
Very efficient in conversion of sugar to alcohol, suitable for white wines in which tropical flavors are pleasing, can be manipulated to leave some residual sugar.

Active Dry Yeasts

Available in 5 gram packets, by the ounce, pound, or one KG tin.
Manufacturer-Fermivin:
FERMIVIN, Holland
Ferments very rapidly, may help restart a stuck fermentation.
Manufacturer-Red Star:
See Red Star (mfr) product information for more details.
CALIFORNIA CHAMPAGNE, UCD # 505, U.C. Davis
FLOR SHERRY, UCD #519
MONTRACHET, UCD #522
PASTEUR CHAMPAGNE, UCD #595
CU-2, (Low Foam: Danish 'Steinberg')
EPERNAY 2
K-1, University of Montpelier

Liquid Malo Lactic Bacteria Cultures

Three strains are available, separately or in combination: 1 oz, 2 oz, 4 oz, 8 oz, 16 oz, or 32 oz. Order at least 5 days before shipment or 3 days before pick-up.
ML-34
Not suggested for use in wines below pH 3.3.
PSU-1, Penn. State University
Vigorous strain for low-pH and white wines, as it can sometimes tolerate a pH as low as 3.1.
STV-200, Burgundy
May accept wine with slightly higher alcohols than other strains.
COMBINED CULTURE,
Recommended for wines which may be reluctant to support M L growth because of adverse conditions (cold, low pH, high alcohol).

Nutrients

Yeast Nutrient, YN
Yeastex, YX
Autolyzed Yeast Extract, AYE
YN, YX, AYE available in 5 gram, 1 oz., 2 oz., 4 oz. 8 oz., 1-4 lb., 5-9 lbs., 10-24 lbs., 25 lbs.
ML Nutrient
Available in 5 gram, 25 gram, 1 oz., 2 oz., 4 oz., 8 oz., 1 lb.

SORRY, Someone Made a Mistake

By Nancy Lynn Gray

California wineries and wine retail shops became quite excited and encouraged when United Parcel Service established the following policy late in November of 1982: UPS would be able to ship wine interstate between twelve states and the District of Columbia. The states were Alabama, California, Illinois, Indiana, Michigan, New Jersey, New York, Rhode Island, Virginia, Washington, Wisconsin, and Wyoming.

Prior to this announcement, wine shipments from California wineries to unlicensed individuals could only be made within the state of California. Now, with a 13 state spread, wineries and retail wine shops could develop extensive, financially rewarding out-of-state mailing list sales programs.

It was as if a new channel of distribution had opened up. Wine, sold at retail cost, could be ordered and shipped directly from the winery to customers in these states. No longer did wineries have to sadly refuse when Aunt Mildred in Illinois wrote to ask if she could please buy one case of that 1981 Gewürztraminer she had tasted while in California last fall.

It seemed as if the complicated nit-picking laws and state tariffs on wine shipments had magically disappeared. UPS only required that the wine be packed in what is known as 'Tharco' packaging (styrofoam insulated carton designed specifically for glass bottles), and that each package have a UPS label, referred to as an "Alcoholic Beverage Adult Signature Required by Law" label. The label required drivers of UPS trucks to obtain a signature of an adult before delivering the wine.

Rejoicing in this new found freedom of wine sales, both wineries and wine retail shops have advertised and made known to their customers that they are now able to ship wine to these states with the only extra charge being the cost of the shipping itself and shipping materials (styrofoam packing).

While not intentionally trying to be a wet blanket, the Wine Institute of California could not help but be a bit skeptical of the legality of such shipments. In the past, the states listed by UPS had always had specific restrictions on interstate wine shipments. As far as the legal department of the Wine Institute knew, these laws had not been relaxed or waived for UPS or any other carrier company.

Immediately after learning of UPS's new service, the Wine Institute made numerous inquiries, writing letters asking, "if UPS was aware of these restrictions and if so, whether special dispensation was afforded to (your) company for transportation activity within these states."

Meanwhile, the Institute advised member wineries to contact each state to learn exactly what their limitations were

PACIFIC TANK CO.

DESIGNING & MANUFACTURING

STAINLESS STEEL FERMENTERS & STORAGE TANKS
SUMPS, CATWALKS, & OTHER EQUIPMENT
FOR BOTH THE SMALL & LARGE WINERY

EXPERTS IN THE SHOP & FIELD
TOP QUALITY WORK, COMPETITIVELY PRICED, RELIABLE

Our customers will verify our workmanship

Circle No. 138 on Reader Service Card

(Days) 707 • 964 7121 ★ 707 • 964 5891 (Weekends)

1200 Willow Street, Fort Bragg, California 95437

Circle No. 138 on Reader Service Card

before attempting to make such shipments. To further assist the wineries, the Institute published and distributed an unofficial survey listing each state's restrictions on interstate wine shipments, while and at the same time, stated that all the laws listed on the survey were subject to change and interpretation by enforcement authorities. It was made clear that the survey itself was not a final authoritative reference.

According to this survey, all the states listed by UPS do have specific regulations pertaining to interstate shipments of wine to unlicensed individuals. The regulations either: 1) prohibit direct interstate wine shipments; 2) require a special permit or permission from the Liquor Commission or Alcohol Beverage Control Board of the state prior to shipment; 3) have restrictions as to the quantity of wine to be shipped to one person within a certain amount of time, and/or require state taxes be paid on all shipments, even though the wine was purchased in or from California.

If a winery took the Wine Institute's advice and called each state into which they were intending to ship wine, they discovered that these regulations and restrictions were still very much in effect.

The Alcohol Beverage Control Commission of Virginia, for example, claims the only way such a shipment could be made legally would be if a particular wine was not available in Virginia. A request would have to be made to the Virginia Commission for a "Special Order Service", in which the Commission places the order for the wine after receiving prepayment which includes mark-up and state tax. The wine would have to be sent to a Virginia Commission outlet, preferably one nearest the party to whom it was to be delivered, where the properly identified party could pick it up.

The State Liquor Control Commission of Illinois states that there is a quantity limit of one gallon of wine per adult person per year, that can be shipped into their state. Any person wishing to receive more than the one gallon limit would have to send a letter to the Commission board requesting permission to do so. In both cases, the state taxes would have to be paid.

Despite the requirements requested by these states, UPS still was accepting and sending interstate wine shipments to these states without question, mention of permits, quantity limits or state taxes. The only requirements imposed were proper packaging and the 'Alcohol Beverage Adult Signature Required by Law' label, and, of course, the necessary shipping fee.

A rather confusing, contradiciting state of affairs. Unfortunately, most wineries and retailers figured that if UPS said it was okay, then it must be okay. If only it were so, but the fact remains that by making these interstate wine shipments, the winery or sender is breaking the law.

Even though these laws are extremely difficult to near impossible to enforce, if such wine shipments were discovered, it would not be UPS that would get its hands slapped, but the winery.

According to Wendell C.M. Lee of California Wine Institute's Legal Counsel, UPS is not legally responsible. "UPS is merely a commercial carrier," says Lee, "Legally, they are not the ones committing the crime; they are only an instrument or vehicle of the crime. They are the gun, they are not the ones pulling the trigger."

Because of this fact, it is easy to understand the Wine Institute's concern that a winery might follow UPS's lead, make wine shipments, and if and when the state caught up with these criminal offenses, the winery would suffer the consequences.

The consequences being, according to the Virginia Alcohol Beverage Control Commission authority: the suspension of the winery's sales license in that state and being required to pay the state taxes due not only on the confiscated wine shipment, but past illegal shipments as well.

While the states were clear in stating their requirements, the officials of UPS said nothing. The Wine Institute continued to send letter after letter, averaging at least one a month, and made phone calls to several UPS officials in an attempt to find out the answer to these contradictions.

In January 1983, Lee was informed by UPS that the matter was being looked into by their headquarters in Connecticut and that all his letters and inquiries had been forwarded onto that office. In an effort to speed things along, as many wineries were waiting on the Wine Institute's findings before embarking on an all-out mailing list sales programs, the Institute asked if they could contact the UPS headquarters personally.

Finally, in June of 1983, Lee was given the name and phone number of the official in charge. When Mr. Lee contacted the UPS headquarters, he discovered that though his letters had been forwarded onto that office, no attempt had been made either by their legal or customer service departments to either answer his inquiries or to even investigate the legal limitations of their advertised services. It seems the Wine Institute had been given the royal run-around for over seven months.

In June, 1983, UPS announced to **PRACTICAL WINERY**, "Interstate wine shipments would no longer be accepted by UPS." According to Dan Buckley, spokesman for UPS on this matter, the decision was brought about, once UPS was advised of the problem that certain states do in fact have certain tariffs and laws in regards to out-of-state wine shipments—a fact which the Wine Institute had been telling them since December of 1982.

Essentially, UPS is blameless. They simply stated that they could ship wine into these states. They probably still can, as long as each state's laws are obeyed and the proper taxes paid. Nonetheless, as of this writing, UPS has decided to refuse all interstate wine shipments.

Many wineries and wine retail shops are going to be very displeased with this new decision, but it may very well be a step in the right direction for interstate wine relations. Hopefully, instead of 'side-stepping' the state laws, positive legal action will be made to change these laws.

20 Years of Service
1963 ACME 1983
EQUIPMENT CORP.
3728 Lexington • Madison, WI 53714
Phone (608) 244-4736
Used & Reconditioned Process Equipment
Stainless Steel Storage Tanks, Silos,
Refrigerated Tanks, Process Vessels, Pumps,
Tubing & Pipeline for the Wine & Beverage Industries.
(608) 244-4736
Circle No. 101 on Reader Service Card

New Filler Valve

A 'Posi-Seal' valve for wine and distilled spirits has been developed by Jagla Machinery Company, Inc., San Rafael, CA. The valve was designed to create a perfect seal which would reduce oxygen entrainment in wine during the filling process and prevent leakage of product at the filler valve tip when the filler is run on straight gravity.

Test runs with the new valve in a Horix gravity filler resulted in oxygen pick-up on purged glass bottles as low as 0.02 to 0.00 ppm. More tests found that filling wines or distilled spirits in plastic containers could be accomplished at comparable or faster speeds, with similar oxygen levels. These tests were conducted on a gravity fill, precluding side wall deformation in the plastic containers, resulting in accurate fill-points.

The 'Posi-Seal' (positive seal) valve can be retro-fitted to several manufacturers' existing filling valve designs, making the benefit of conversion, a low cost option for gravity filling, especially on white wines or distilled spirits in the new PET containers.

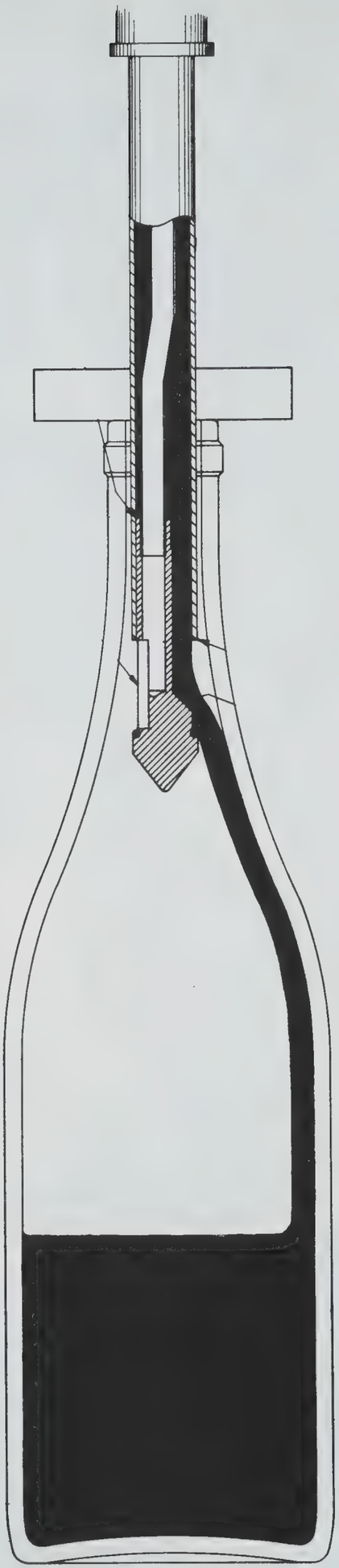
'Posi-Seal' incorporates a Viton O-Ring seal on a closed inner-vent tube which can be changed without disassembly of the valve, reducing down-time. 'Posi-Seal' can be used with either straight gravity or low vacuum filling processes.

Valve sleeves with thick wall construction to minimize maintenance costs can be supplied new, or original sleeves can be modified to accept the new style tube. The thick wall sleeve design reduces valve damage and bent tubes, and are machined to tolerances which will allow repairs by bottling line personnel.

The inner-vent end is silver brazed or welded to the vent tube allowing any type of sanitizing. Chemicals will not erode the soldered joint. Silver brazed inner-vents can be repaired at 1/2 the cost of new replacements.

Posi-Seal's inner-vent design precludes the need for a separate tip reducing maintenance and potential of falling off into a container. The design permits the filling angle to be custom engineered to decrease turbulence while increasing filling speeds. The extended tip angle assists centering the container for smoother operation. The inner-vent configuration can easily be changed for increased fill speeds on long necked containers.

For more information, contact Jagla Machinery, 26 Woodland Ave., San Rafael, CA 94901, (415) 457-7672.



JAGLA 'POSI-SEAL' VALVE

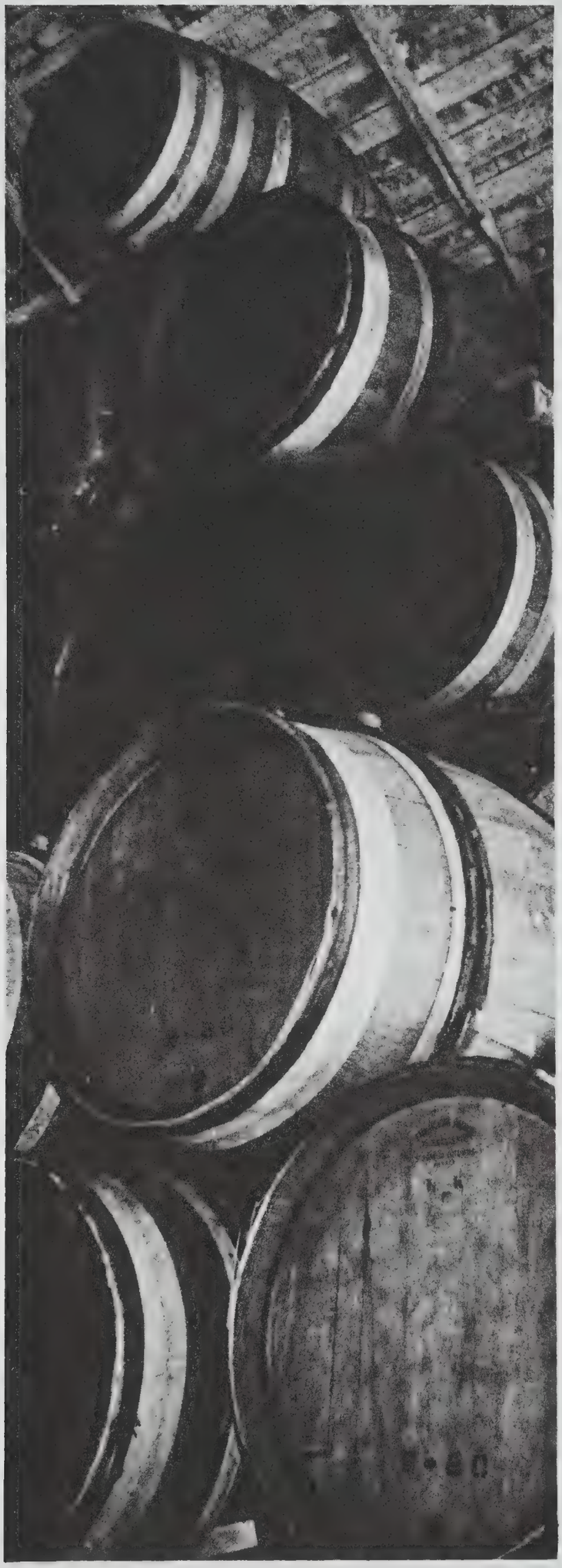
ENOLOGY
CONSULTANT

JAMES VAHL Ph.D.

Premium Winemaking • Winery Quality Control
Legal Compliance • Troubleshooting
Computer Applications

707 963-5423

Circle No. 148 on Reader Service Card



BARRELS and WINE

By DENIS KELLY

Clean or Dirty Wine Into The Barrel?

One of the things I've noted while talking to winemakers about small oak cooperage and wine styles over the past few months is the differing opinions about when wine should begin ageing in small barrels.

Some winemakers feel that the wine should be essentially stable and clear before it is racked into small oak. Others think that putting a wine into the barrel 'dirty', (that is while still cloudy and unracked, unfined and unfiltered) contributes much to the wine's final quality.

I decided to talk to winemakers on the subject and get their opinions on putting 'clean or dirty' wine into the barrel. Some preferred barrel fermentation of whites while others opted for stainless steel followed by small oak. Some followed the classic California and Bordeaux practice of blending and settling out the reds before moving to barrels; others liked the Burgundian practice of going right into the barrel.

As usual among California winemakers, the discussion was lively and opinions were varied and vigorously argued.

Bob Travers, Mayacamas Vineyards, reported that he cleans the wines up before putting them into small oak. The whites receive several rackings and a bentonite fining before barrel ageing and are relatively clear and stable when they go into the barrel. Neither the whites or reds are centrifuged and both receive only a polish filtration before bottling.

Red wine at Mayacamas, mostly Cabernet Sauvignon these days, is settled, cleared and aged in 1,000 gallon oak tanks for approximately two years and receives about four rackings during this period. Malo-lactic fermentation is complete, and the wine is clear and stable when it goes into small oak barrels.

Travers sees the extra year in large cooperage as an integral part of the winery's style for Cabernet and feels that the wine takes to the wood and develops better in small oak if it is clean. He feels the barrel contributes more to the wine's character this way, rather than from barrel fermentation or ageing on the lees.

50 Wineries Now Use The Boswell Bung!

Can you afford to overlook this little gem? Fabricated from high grade silicone, the Boswell bung easily outperforms its fir and redwood ancestors. The Boswell bung puts a stop to wicking and requires no pretreatment.

Easy to place and remove, the Boswell bung provides extra protection for your valuable barrels. Best of all, the Boswell bung's virtually infinite lifespan ends the problem of periodic replacement. The Boswell bung. Cost efficient. Pure and simple.

For more information contact The Boswell Company
305 San Anselmo Ave. Ste. 313, San Anselmo, CA 94960
415 · 457-3955

THE BOSWELL COMPANY

Circle No. 108 on Reader Service Card

While there is a practical side to the method used at Mayacamas—its easier to clean the lees out of one large tank rather than many small ones—Travers says the reason they follow this method is essentially stylistic.

Ken Burnap, Santa Cruz Mountain Vineyards, prefers the wine to go into small oak cooperage soon after pressing. Burnap specializes in Pinot Noir and likes the wine to begin ageing 'dirty' and remain on the lees long enough to ensure that malo-lactic fermentation is complete.

He racks the wine off the gross lees and into small Limousin oak barrels made by Francois Freres. The nutrients still in the wine—and autolysis of the yeast—not only help complete a natural malo-lactic fermentation (Burnap does not inoculate with m-l culture), but the lees contact adds complexity and nuances in aromas and flavors, along with a more satiny mouth feel.

Burnap stresses that you can't simply leave the wine on the lees and forget about it. He carefully monitors each barrel for H_2S and off odors and racks when necessary.

Certain varieties react differently to being cleaned up early, Burnap maintains. Cabernet Sauvignon and Petite Sirah seem to do well going into the barrel clean. On the other hand, Pinot Noir (Burnap's specialty) seems one-dimensional and thin when cleaned up early in its development. Small, experimental lots of Chardonnay seem to react more like Pinot Noir. When not cleared too quickly, they become more complex, with richer flavors and mouth feel.

Bruce Cakebread, Cakebread Cellars, puts white wines (Chardonnay and Sauvignon Blanc) into the barrel just after fermentation and some settling. "The whites are pretty murky when they go into the barrel," he says, "they look just like milk."

He will usually leave the Sauvignon Blanc on the lees for about two months. With the Chardonnay, the length of time depends on 'how stinky it gets'. If he detects H_2S in the Chardonnay, he racks the wine. He very rarely gets H_2S in the Sauvignon Blanc, although he uses the same types of yeast (Champagne and Bordeaux Blanc) and the same barrels (Limousin from Nadalie).

Red wines, largely Cabernet Sauvignon, complete their malo-lactic fermentation in stainless steel tanks on the lees after the gross racking. In the spring, the reds are racked into older barrels previously used for white wines.

Cakebread feels that putting the whites into the barrel dirty and leaving the reds in contact with the lees gives more complexity and fullness in the mouth. The wines take on an oiliness and depth not found in wines cleaned up early. He doesn't perceive much effect on the aromas, but finds a definite difference in flavors and mouth feel.

Paul Draper of Ridge Vineyards says, "We have always and continue to put wine in the barrel unfined, unfiltered and with a minimum of treatment." The big red wines of Ridge, largely Zinfandel with some Cabernet Sauvignon, are transferred from stainless steel fermenting tanks into secondary fermentation tanks where the wines go to dryness, and clear somewhat. They are then racked off the gross lees and if malo-lactic is complete, SO_2 is added and the wines are put in 50 gallon American oak barrels to age.

Each wine has different requirements and is racked when Draper thinks the time is right. An average would probably be around every 3-4 months during the first year and every 4-6 months the second year, depending on the particular wine.

Mike Richmond of Acacia Winery, reports their practice with Chardonnay varies. Sometimes, the wine is transferred to the barrel at about 10° Brix and sometimes when it is totally dry. It depends on the wine.

Pinot Noir settles out for one-two weeks after fermentation and then is transferred to Francois Freres Limousin oak barrels. After that, the wine is monitored for H_2S. If the wine develops H_2S, it is racked immediately, otherwise the wines have lees contact until the next racking in the spring when they are cleared by fining with gelatin, egg whites or bentonite (determined by lab trials).

Steve O'Donnel of Callaway Winery, doesn't currently age Chardonnay in wood and racks Sauvignon Blanc into 160 gallon German oak ovals and 60 gallon German oak barrels after settling and clearing. Johannisberg Riesling and Chenin Blanc are centrifuged and then transferred to 160 gallon oak ovals.

Oak used at Callaway is from Germany's Spessart Mountain area and O'Donnel says, "This German oak doesn't have the carpenter shop flavors of American oak or the 'fat' flavors of French oak like Limousin or Troncais. It's more austere and dense, but not citrusy like Yugoslavian. It has a definite flavor characteristic—you might call it like walnut—if the wine were left in a new barrel long enough to pick up some definite wood flavors." Callaway does not make red wines.

Nils Venge of Groth Vineyards says, "I like to let the whites settle out in stainless steel for about a month or so, but in the past, I was usually pressed for space to ferment the Cabernet, so I'd rack it out into barrels fairly quickly. One or two rackings would clear it pretty well, no centrifuging was necessary."

Venge puts Chardonnay into small French oak fairly soon after fermentation ceases, and leaves it until February when the wine is racked into stainless steel, bentonite fined and cold stabilized. The wine is then transferred back into barrels until it is ready for bottling.

He prefers to let the wine get the right level of oak from the barrel and then bottle as soon as possible. "I'd much rather let the Chardonnay get some nice bottle bouquet than age it in stainless after it's been in the barrel," adds Venge.

Cabernet Sauvignon receives a minimum of treatment from Venge. After pressing and settling, he racks it once or twice to make sure it's free of H_2S and then transfers it to small French oak barrels (largely Nevers). His normal racking schedule for Cabernet is: one week after pressing off the gross lees, after two weeks another racking, and then after two or three more weeks, the wine is racked into the barrel.

The wine is egg white fined after malo-lactic fermentation is completed, usually after the first summer. Venge does not

DATAMASTERS COMPUTER SERVICES
Custom Systems
For The Wine Industry
• Batch • On-Line
• In-House
(916) 485-0159
2828 Walnut Avenue
Carmichael, CA 95608
California Only 800-952-5686
Circle No. 116 on Reader Service Card

inoculate with malo-lactic culture and has never had any trouble getting the Cabernet to complete malo-lactic in the barrel.

Venge's winemaking philosophy is not to rush the wine and to let the wine progress as naturally as possible. "The wine's just like your own child," Venge says, "You don't want to push too hard. It's much better to let the wine develop at its own rate."

When in Europe recently, he was impressed with the casual attitude of many of the European winemakers. "In Burgundy, when I was talking about yeast strains and malo-lactic cultures, they were surprised. They seemed to just let nature take its course, by and large, although when they needed to lower acidity they'd use a prepared culture if they had to."

Rod Berglund of La Crema Vinera Winery was very emphatic about the question, "The wine whould be as dirty as it can be, and still be safe. We barrel ferment our Chardonnay in new oak and leave it on the lees for quite a while to promote malo-lactic on a barrel by barrel basis. The cleaner the wine is when it goes into oak, the more obvious and coarser the oak extraction."

Berglund maintains that clean wines pick up more of the obvious oak characteristics including bitter flavors. "If you put clean wine into new oak, you get a pretty oaky wine very quickly. A Chardonnay that's been fermented in stainless steel and centrifuged will pick up the harsh flavors of the oak much more readily than a barrel fermented wine.

"I like oak, and many say our wines are oaky, but what they are probably tasting in our Chardonnay is the toastiness gained from malo-lactic fermentation and yeast contact."

Pinot Noir at La Crema Vinera settles for a few days and then is racked off the gross lees. Berglund makes no attempt to clean it up and puts it into French oak barrels until March or April without racking.

Barrels are carefully monitored for volatile acidity and H_2S. Samples are taken not only from the top of the wine in the barrels, but from the bottom just above the lees. The 1982 Pinot Noir was still being racked in early June and had been on the lees since the first racking just after harvest.

From a sensory standpoint, Berglund feels, you get much more complexity from lees contact. Flavors are imparted from dissolved solids and from autolyzed yeast cells, and the wines are more complex than wine put clean into the barrel. This is one of the reasons that French wines, particularly Burgundys, are often more complex than American versions of the varieties, he feels.

Berglund is following typical Burgundian practices with his Chardonnays and Pinot Noirs. In Bordeaux, red wines are typically blended into large tanks just after pressing to clear before they are put into small cooperage.

"But in Burgundy," says Berglund, "they say they go into the barrel when the wine is still warm, that is, when the wine is still fermenting and hasn't completed its malo-lactic. The wines are then left on the lees for a very long time and gain in complexity and depth of flavor. Prolonged lees contact is absolutely essential for this style of wine.

"If you put a wine into the barrel dirty, the wine absorbs some of the oak's undesirable components, but these are then settled out into the lees. If you put a Chardonnay in clean, these bitter, aggressive flavors will remain with the wine. Here at La Crema Vinera, we are experimenting with batches of wine, racking one barrel per month to see what flavor and aroma differences we can find.

"I like to see a harmonious integration between the oak and the fruit. What I don't like, is a wine where the fruit and the oak stand out apart from each other as distinct components. I think barrel fermentation, lees contact, and putting the wine dirty into the barrel makes for an integrated, complex harmony of fruit and wood that is the hallmark of the style we are trying to develop in our wines."

Bob Pecota of Robert Pecota Winery says, "We give our Sauvignon Blanc 12 hours skin contact and then press. We stop pressing by pH (when the pH is above 3.4) and cold settle the juice overnight. We rack the juice with about 2-3% solids off the gross sediment, inoculate and cool ferment to about 14° Brix.

"Then we transfer to Nevers oak puncheons and let the wine ferment to dryness. The wine sits on the lees from five days to two weeks depending on the vintage and we then rack, clean the barrels, and put the wine back into the barrels until it's ready to bottle.

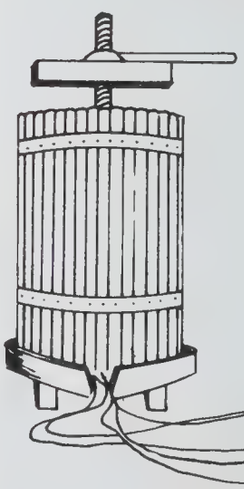
"For Cabernet Sauvignon, we do a standard red wine fermentation and press at 3° Brix, rack into a tank and let the wine finish out dry and settle. We rack it off the lees as soon as possible and cool the wine to 50°F if malo-lactic fermentation is complete.

"We rack it after it's settled and then leave it until February when we rack it again into small oak barrels. The wines stay in wood for 1-1½ years without racking, being topped up every two weeks.

"Chilling the reds, precipitates out the elemental sulfur and pretty much eliminates any H_2S problems. That way, we can put it into the barrels clean and stable and not worry about any problems. Chilling the Cabernet gives us a cleaner wine without having to centrifuge or filter."

PICKERING WINERY SUPPLY

For All Your Maintenance & Chemical Needs
Exclusive Distributors



O'SULLIVAN
Paints & Specialty Coatings

- EPOXY COATINGS
- MILDEWCIDES
- LATEX & ENAMELS

SELLERS Tank Washers

- MODELS TO CLEAN ANY SIZE TANK ECONOMICALLY

WINERY CHEMICALS
100 lbs. TO CONTAINER LOADS
ALL TYPES OF FLOOR COATINGS

415-821-2400

1300 22nd St., San Francisco, CA 94107

Circle No. 139 on Reader Service Card

Q's & A's
Quality Approach

By BRUCE RECTOR
Consulting Enologist

Q: *My winery has a limited budget. What wine analysis should I be doing?*

A: The definitive answer to this was recently printed and mailed out to all bonded wineries by Vinquiry, the consulting lab in Healdsburg. If you missed it, I imagine if you send a stamped-self-addressed envelope they will mail you a copy of the comprehensive wine analysis checklist.

Meanwhile, let me cover the most important test to safeguard quality, free SO_2.

The easiest method to use is the Ripper test. It has a flaw in that it will show SO_2 that is bound by red pigments as free SO_2, but then again so does the vacuum aspiration method.

Ough and Amerine in **Wine and Must Analysis** state the procedure thusly: Pipet 50 ml of the wine sample into a 250 ml Erlenmeyer flask. Add 5 ml of a starch indicator solution, 5 ml of 1:3 sulfuric acid, and a pinch of sodium bicarbonate to expel air. Rapidly, titrate the free sulfurous acid using .02 N iodine solution. The end-point is the first darkening of the solution to a bluish color which persists for 1-2 minutes.

Chemicalese is a good concise language if you are initiated. I will adapt the procedure to one that can be done in the cellar, a quick and dirty method, if you will, that should be verified by your in-house lab or your consulting lab to see if your answers are higher, lower or both.

Equipment & Solutions

- Several 500 ml, narrow mouth, Erlenmeyer flasks
- 2 pipets to dispense 5 ml portions (may be automatic, volumetric or graduated)
- 1 graduated 10 ml pipet
- Graduated cylinder or better yet, a wine thief marked to dispense 50 ml (mark approx. 6-3/8 inches from the tip on the three piece plastic type)
- Approximately .02 Normal (Normal is an indication of strength on an atom or molecule basis) which has been standardized by your in-house or consulting lab within the last 45-60 days if stored properly. You must store this in a tightly sealed, amber bottle in a cool, dark place.
- Starch Indicator (.2% soluble starch) which should be stabilized with a poison to keep it from fermenting or keep it in the refrigerator.
- 3 + 1 (25% concentrated sulfuric acid) 3 parts water, 1 part concentrated sulfuric acid.
- Strong source of white or yellow light such as a tensor lamp

(All of the above solutions are available at consulting labs)

Procedure

Ready your solutions. Pour what iodine you will need into a small bottle and immediately cap up the main bottle. Do not return unused iodine to the main bottle. Put the 10 ml pipet into this small bottle. This pipet is going to take the place of a buret that you would use to titrate in the lab.

JABSCO PUMPS®
For the wine industry

PUMP MODEL 12490-0001. Self priming, and constructed of 316 stainless steel, these pumps have totally enclosed, fan cooled, thermally protected 115/230 Vac single phase motors. Quick take apart for easy cleaning and service.

RUBBER TIRED CART Gives you mobility and versatility in your pumping operations. Model 45838-0000.

SEND FOR FREE LITERATURE

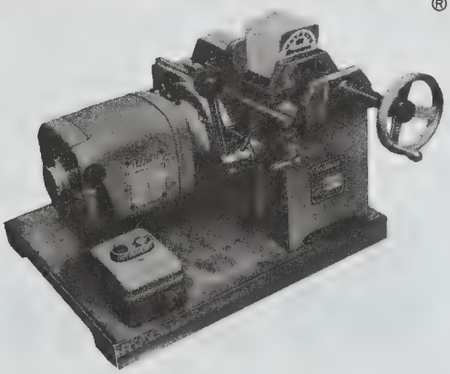
ITT JABSCO®

ITT Corporation, 1485 Dale Way, Costa Mesa, CA 92626
Telephone (714) 545-8251

Circle No. 123 on Reader Service Card

the NEATEST FASTEST CHEAPEST way to code any label.

CODEDGE®



GRIFFIN-RUTGERS CO., INC.
P. O. BOX 71
EAST ISLIP, N. Y. 11730 516 - 277-1500

Circle No. 120 on Reader Service Card

Put the 5 ml pipets in the starch and 3 + 1 bottles.

Using one of the instruments mentioned above, put 50 ml of wine into an Erlenmeyer flask. You may set up several of these but don't confuse the flasks and do not add the 3 + 1 en masse.

Add approximately 5 ml of starch indicator first, then approximately 5 ml of 3 + 1. Once the 3 + 1 is in the flask, you should complete the test in less than a minute, otherwise you will get falsely low readings.

A note about pipeting. The art lies in the right moisture level on your finger—not wet, just very barely damp—and rotating the pipet to break the seal slowly and let the contents drip, not squirt out.

Draw the iodine up into the pipet so it is at the 0 mark such that you have a full 10 ml in the pipet. Tilt the pipet back and insert the tip into the Erlenmeyer flask with the wine in it. Slowly break the seal between the pipet and your finger, so you get a drop a second.

Make the drops hit the center of the flask and gently swirl the flask so the iodine 'feathers' out to the edges. The only way you are going to tell you have come to the end-point in a dark red wine, is to use this 'drop it in the center, and feather it out' technique.

Where the iodine is localized in the center of the flask, you will almost immediately see the blue end-point. Keep adding the iodine until the blue in the center spreads to the edges and the entire mixture turns blue. You have reached the end-point; immediately read the pipet to the nearest tenth of a ml and record this figure as 'ml's of iodine used'.

You may return the unused iodine to the small bottle. The blue of the end point should remain for 15 seconds, and if by shaking the flask, you cannot make the end-point disappear, then you have overshot the end-point.

Another point is you do not have to add the pinch of sodium bicarbonate as mentioned in the first procedure.

If you have never tried pipeting before, you may be better off with a buret, but believe it or not, this can be a very high speed test. Whatever you do, try a white wine first.

Now to translate ml's of iodine used to ppm of free SO_2. The formula is:

$$\text{Free } SO_2, \text{ ppm} = \frac{(\text{ml's of Iodine})(\text{Normality of iodine})(32)(1000)}{(\text{ml's of sample})}$$

If we always use a 50 ml sample, there are only two numbers that change on the right hand side of the equation. The Normality figure changes only when we standardize it. For example, if the Normality of the iodine is 0.0195 N, we can multiply everything together except the ml's of iodine and get 12.48, which becomes our 'factor'.

So if we take 2.2 ml of iodine to reach the end-point, multiply 2.2 by 12.48 and we get 27.5 ppm of free SO_2.

Is that a good level? You MUST know the pH of the wine to answer that question. Molecular SO_2 is a function of pH and that's another bag of worms.

Summary

1. Dispense 50 ml of wine into an Erlenmeyer flask.
2. Pipet approx. 5 ml of starch indicator into the flask.
3. Pipet in approx. 5 ml of 3 + 1 (25%) sulfuric acid.
4. Titrate without delay using a 10 ml pipet and iodine solution to the blue end-point.
5. Record the number of ml's of iodine used.
6. Multiply the ml's of iodine used by the 'factor' to obtain ppm of free SO_2.

© 1983 Bruce Rector

Send your winemaking question for Bruce Rector to receive a Quality Approach answer to PRACTICAL WINERY.

From the ŒNO-FRANCE LABORATORY GROUP:

Dry Yeasts:
- Levuline Alsace—especially for cold fermentations
- Special Yeast—for Champagne (CIVC)

To Clarify Bottle Fermented Champagne:
- Colvite—clarifier
- Boltane—special tannin

For Still Wines:
- I.S. 15—gelatin clarifier
- Stabicolor—to impede tannin sediments

For Wine and Brandy:
- VB 105—extract of Limousin Oak

FOR MORE INFORMATION CONTACT:

Exclusive U.S. Distributor for the finest quality equipment and supplies

MOFFETT COMPANY, INC.

6985 Via Del Oro, A-5, San Jose, CA 95119 □ Phone (408) 578-4910 □ Telex 357473

Our Eastern Rep.: Robert L. Stollenwerk Co., P.O. Box 282, Hamburg Ave., Egg Harbor City, NJ 08215. (609) 965-0074.

Circle No. 132 on Reader Service Card

IN THE CELLAR
with Jake Lorenzo

(editor's note: I last saw Jake at Gundlach-Bundschu's sensational 125th Anniversary party. In his own fashion, Jake forgave me for some minor changes I made in his last manuscript: he forced me to drink four shots of Hornitos . . . at gunpoint. He also insisted I confess that all the exclamation points in his manuscripts were mine. His exact words were, "I never used a _____ exclamation point in my life!")

When you wake up and find yourself sleeping on the ground as often as I do, you tend to develop a love and respect for the land. Land, as any farmer will tell you, can be rich and bountiful, but farming that land can be frustrating, fruitless and financially disastrous.

The farmer's day is long, hot and dusty. Things are constantly breaking down and needing repair. Crops are continually threatened by bizarre weather conditions, a myriad of insects and diseases, and the dreaded tractor blight. Even when the farmer has done his job and the crop is ready, a capricious market can spoil a whole year's harvest.

Obviously, farmers are a special breed of people. Since the wine industry is so dependent upon the success of grape farmers, I felt this column was in order. Remember, however, I am a private investigator trained to see below the surface. When I speak of farmers, I am not necessarily talking about the guy whose name is on the label. I'm talking about the guy driving the tractor, the guy walking the rows, the guy with sulfur up his nose.

Look at today's wineries and you will find that the best of them, those whose wines actually improve year by year, have someone special managing their vineyards. These are the unsung heroes of the wine industry. Their diligence and talent determines the quality of the raw material given to the winemaker. And it is the quality of the fruit, after all, that most affects the quality of the finished wine.

Chateau St. Jean is quite possibly the most famous winery in Sonoma Valley. Dick Arrowood is a heck of a winemaker. Don Von Staaveren and his crew make beautiful wines, but the man bringing in the fruit since the inception of the winery has been none other than Barney Fernandez.

People rave about Chateau St. Jean's Chardonnays, Rieslings, and Gewürztraminers. They compare Robert Young, Belle Terre and McRae Ranch. While those growers are fine farmers in their own right, Barney is the go-between, the conduit from farmer to winemaker, from field to the crusher.

Barney is boisterous, fun loving and loud. He knows a hell of a lot about grapes and their care, and may be California's leading expert on botrytis in the vineyard. Barney shuns the publicity and hoopla of the wine business, but he has been far too valuable a factor in the success of Chateau St. Jean to escape my detective's eye.

Jesus 'Chuy' Ordaz cooks the best birria in Sonoma Valley. He also manages the vineyards for Kenwood Winery. John Sheela, president of Kenwood Vineyards says, "Chuy is a great manager of manpower. His ability to organize a crew, get the grapes picked at the right time and to the winery as quickly as possible has had a lot to do with our ability to improve the quality of our wines."

Chuy's crew is legendary in Sonoma Valley. The entire crew has been known to sing songs while sprinting down the rows with full lugs of grapes on their heads. Chuy is a leader of men and a master of the vine.

Chuy manages, single-handedly, a crew of up to 60 men and women, and is largely responsible for the quality of fruit delivered to Kenwood Winery. He has held this vital position for more than seven years, but when was the last time you heard or read about Chuy Ordaz?

Rhinefarm Vineyards and Gundlach-Bundschu have been around for 125 years. Since the winery's rebirth in 1973, Marcello Hernandez has been managing the 350 acres of grapes. According to owner Jim Bundschu, "Marcello is entrusted with the grapes and their health. He is responsible for doing everything necessary to provide the winery with the finest grapes possible. Fortunately for Gundlach-Bundschu, he is very good at doing just that."

Marcello is a hardworking and creative farmer who insists on doing things right the first time. He spent three years working in the winery during crush to better understand the problems and frustrations of the winemaker. His shift from cane to cordon pruning of Rhinefarm's Merlot coincided with and obviously contributed to Gundlach-Bundschu's tremendous success with that varietal.

Farming, winemaking and research go hand-in-hand. Researchers analyze grapes and wines down to microscopic components. They study nitrogen, potassium and chemical build-up in the soil and vine. They examine pH, TA, and phenolics in wine. They have used microscopes, telescopes, radar, HPLC and voodoo, but the secret of great wine remains a mystery.

I am not an expert in any scientific sense. I am not berating the valuable and important technical research being done, but my detective's nose tells me that the real secret lies elsewhere.

Grapes and wines are living things. Living things relate to and interact with the world around them. In a large part, vines and wines become what they do because of the people who tend for them.

Barney, Chuy, and Marcello maintain a special relationship with the vines in their care and they provide a link between the field and the winery. Each puts his indelible mark on the finished wine.

I think that the secret to great wines lies in the people who make them!

RETECH

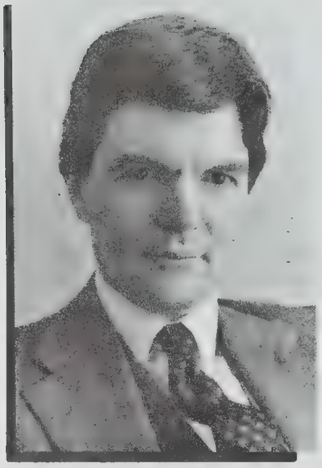
Winery Refrigeration & Heat Reclaim Systems

Why heat the *Outdoors*
While you *Pay* to heat your water

The money you save may be your own

REFRIGERATION TECHNOLOGY, INC.
133 Madera Avenue, San Carlos, CA 94070, (415) 593-9593

Circle No. 141 on Reader Service Card



THE WINE LAWYER

By R. CORBIN HOUCHINS

With this issue **PRACTICAL WINERY** *begins a regular feature dealing with the legal aspects of operating a winery. Our columnist, R. Corbin Houchins, is a partner in the law firm, Duryea & Houchins, which practices in the areas of liquor law, capital formation and antitrust.*

Between 1971 and 1977, he was corporate counsel for E & J Gallo Winery and has long been involved in wine-related activities, which have ranged from conducting tasting programs to teaching a course in beginning enology.

His columns will touch on pricing, distribution, trademark protection, labelling, advertising, taxes, cellar treatment, new legal developments and other matters of interest to the industry.

If man has been making wine for 3,000 years, he has probably been taxing and regulating it for at least 2,999 years.

History does not record the birth of wine laws, but it seems likely that the Sumerians or one of their neighbors decided early on to limit winemaking to enrolled taxpayers operating with the knowledge and consent of the sovereign. Whoever first thought of it, the regulation and taxation of wine has been stupendously successful from the governmental point of view.

Everyone in the industry has learned to live in an environment of rules and revenue measures which, if proposed for business generally, would be shouted down at once.

We in the industry greet our friendly regulators with first names, protect the revenues of our sovereign with bizarre floor plans and label with all the mandatory information and none that is prohibited, useful or not. It isn't necessarily all that burdensome, but it does introduce an extraneous element of uncertainty every time one wants to do something a little bit different.

Part of the uncertainity comes from the sheer number of laws applicable to the production, promotion and sale of wine. Additional complication arises from the facts that not every law actually operates as is commonly understood and that practices of long standing can be overturned by unexpected judicial developments.

In these columns, we will examine the presently effective rules, then try to make some useful comments on where the law might be going. At this point, however, a couple of caveats are necessary: First, this column does not constitute legal advice and should not be relied on for guiding the conduct of any alcoholic beverage licensee or permittee. Secondly, although there will be frequent reference to regulatory enforcement policy, I do not speak for BATF or any liquor control board; indeed, I sometimes disagree with regulatory agencies about the meaning and application of the liquor laws.

That said, let's begin with one of the most rapidly changing areas:

WINE PRICING

An extremely significant development of the past few years is the increasing application of federal antitrust laws to liquor industry practices. Nowhere has the trend been more dramatic than in the pricing of wine.

As everyone knows, the 1980 *Midcal Aluminum* case caused the entire California wine resale price maintenance scheme to tumble down overnight. Basically, the lesson of *Midcal* is that normal legal rules applicable to the rest of the business world apply in the liquor industry, except when what is being done is required by public policy which is clearly announced and actively supervised by the state. That judge-made exception is known as the 'state action exemption'.

Any nonexempt manufacturer who controlled the price at which wholesalers or retailers resold his products would soon find himself in court (and quite possibly before a federal grand jury) under antitrust laws which have forbidden price fixing since 1890. California's wine resale price maintenance system did not qualify for the state action exemption because it lacked state supervision of prices. It was declared invalid on March 3, 1980 and taken off the books on January 1, 1983.

TWO KINDS OF POSTING

The end of resale price maintenance suggested to many in the industry that price posting itself, even if not accompanied by control of resale prices, was also illegal. For a time, it appeared that wine would be brought fully into the post-1890 American economic system.

To understand why that has not happened to date, it is necessary to consider the difference between a resale price maintenance system (or 'fair trade' price posting) and 'simple' price posting. The former requires the customer (or customer of the customer) of the person who does the posting to sell at (or, occassionally, not below or with a minimum markup over) the posted price. The latter requires the person who does the posting to sell at (or, in some cases, not below) the posted price for a specified time.

Most people are aware that the antitrust laws make it illegal for two people who sell competing goods to agree on a selling price to the public. That is classic price fixing, known in the antitrust trade as 'horizontal' price fixing because the perpetrators are on the same level of distribution.

Fair trade price posting constitutes price fixing because two parties enter into an agreement (or in some cases a coerced combination) affecting the price charged a third party, but it is 'vertical' rather than horizontal, because the actors are in different distribution tiers.

Although vertical price fixing is illegal under the Sherman Act, which has been around since 1890, its illegality was not free of doubt until well into the 20th century. Even now, it is generally considered less hard core than horizontal offenses and seldom results in criminal prosecution.

END OF 'FAIR TRADE'

Between 1937 and 1975 there was a federal statutory exemption for vertical price fixing pursuant to any fair trade contract authorized by state law. Fair trade survived until 1980 for wine because before the *Midcal* decision some state laws assumed incorrectly that the constitutional amendment which repealed Prohibition created a special antitrust exemption for

regulated alcoholic beverages. Presently, the only relevant exemption from antitrust liability for wine price fixing is the state action doctrine mentioned earlier.

There is essentially no way to have fair trade price posting without vertical price fixing. The agreement or coercive combination which violates the antitrust laws is the essential feature of the system. It is clear after *Midcal* that a winemaker cannot lawfully enter into an understanding with his wholesaler regarding the selling price, or minimum selling price to retail accounts, or with a retailer regarding shelf or wine list prices or minimum prices, unless he is doing it under compulsion of a state law which does meet the requirements for the state action exemption.

HORIZONTAL UNCERTAINTY

The relation of simple price posting to horizontal price fixing is, however, not so clear. To be sure, any group of nonexempt businessmen who announced price in advance and agreed not to change them for a specified period would very likely see the inside of a federal detention facility. The uncertainty lies in whether a system which does not literally compel agreement on price will be permitted, even though it facilitates the kind of horizontal communication and aquiesence in stable pricing that lead to antitrust liability in the normal business world.

Additional questions have arisen in post-*Midcal* decisions regarding the amount of state activity required to meet the state action test. In Massachusetts, a state court found the liquor board's power to permit departures from the posted price in certain circumstances to be sufficiently active involvement to exempt a vertical price fixing system which discouraged trans- shipment by forbiding the wholesaler to add a surcharge over the manufacturer's posted price. On the other hand, the power to authorize close-outs, for example, evidently does not suffice for California.

RECENT DEVELOPMENTS

Meanwhile, the pending *Miller* case in Oregon has moved from state courts to the federal system with some indication of a difference in approach, Minnesota has declared its wholesale wine posting law invalid, and the Connecticut minimum markup law survived a court test only to face attack in the state legislature. Interesting battles have been joined in other states as well, resulting in a pattern which is, to say the least, not uniform.

Some clarification may be forthcoming. Last year, a simple price posting law for spirits was invalidated by the courts of California in the *Lewis-Westco* case, presently under appeal to the U.S. Supreme Court, which had not agreed to hear it at press time. The spirits case could shed light on the effect of *Norman Williams*, a non-price Supreme Court case which was decided after *Midcal* and which raises the possibility that state price posting laws which merely facilitate, rather than compel, price fixing are valid even without meeting the state action test.

LESSONS

Uncertainities notwithstanding, there are a few things than can be said with assurance at this point. They include:

1) Don't enter into an agreement with your distributor or a retailer regarding the prices at which he sells your product. Suggest resale prices if you like, discuss proper pricing with him if you must, but don't commit him to a price or to any range—minimum or maximum.

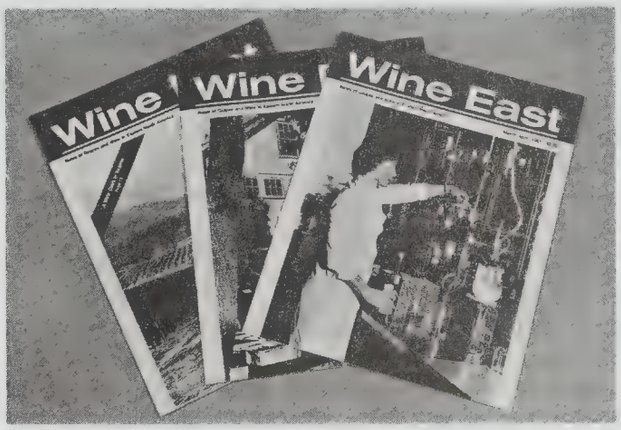
2) Don't discuss or even think of any kind of agreement or arrangement with other winemakers affecting prices—not even a silent understanding to abide by price posting laws.

3) The safety of complying with price posting laws must be gauged on a state-by-state basis.

R. Corbin Houchins is a partner in the national liquor law firm, Duryea & Houchins. His column is not intended as legal advice, nor does it necessarily represent the views of regulatory agencies on the matters discussed. Readers who would like to submit specific questions for discussion in future columns are invited to send them to Houchins in care of PRACTICAL WINERY.

Wine East

The lively magazine that keeps you up-to-date on the news of grapes and wine in Eastern North America.



With 325 wineries located between the Rocky Mountains and the Atlantic Coast, wine professionals and consumers are discovering the importance of keeping informed about this rapidly expanding wine region. Published bimonthly, *Wine East* reports on the latest developments and upcoming events on the Eastern wine scene. Each issue contains winery profiles, in-depth features on Eastern grapes and wine, and human interest stories centering around Eastern wine people.

Subscription rate: $10.00 for one year ($15.00 in Canada and overseas, payable in U.S. funds)

Write for a free sample and/or a list of other publications available about the Eastern wine industry.

L & H Photojournalism
620 North Pine Street
Lancaster, PA 17603

Eastern Wine Publications

Circle No. 151 on Reader Service Card

RIESLING: Grape Varieties and Wine Styles

(editor's note: This presentation was given by Walter Schug, Consulting Winemaker—Joseph Phelps Vineyard, St. Helena, CA., at the Napa Valley Symposium, February 13-15, 1983. The transcript was provided by the Napa Valley Wine Library. Schug, chief winemaker at Phelps for the past ten years, graduated from Geisenheim in 1959. His experience in Europe and California prior to joining Phelps included six years with Gallo. As of June 1, 1983, Schug became consulting winemaker at Phelps and will continue as a vice-president and vineyard manager. This change allows Schug to devote more time to the development of his family wine venture, Schug Cellars in Calistoga. Craig Williams, Schug's understudy and assistant since 1976 at Phelps, assumes chief winemaking responsibilities.)

By Walter Schug

White Riesling is one of the classical grape varieties of the world, now widely planted around the globe. Its fame spread from Germany where approximately 46,000 acres, or 20% of all varieties are planted to Rieslings. This compares with only approximately 10,000 acres in California.

Many synonyms such as Johannisberg Riesling are known. There are also varieties which bear 'Riesling' as part of their name without being related. White Riesling is second to none in its ability to yield interesting wines at maturity levels of 16° to 60° Brix.

Research, attention to detail and technological advances have established its importance in the cooler growing regions of California. It is also found in significant plantings in Alsace, Austria, Yugoslavia, Switzerland, South Tyrol, South Africa, Australia and Chile.

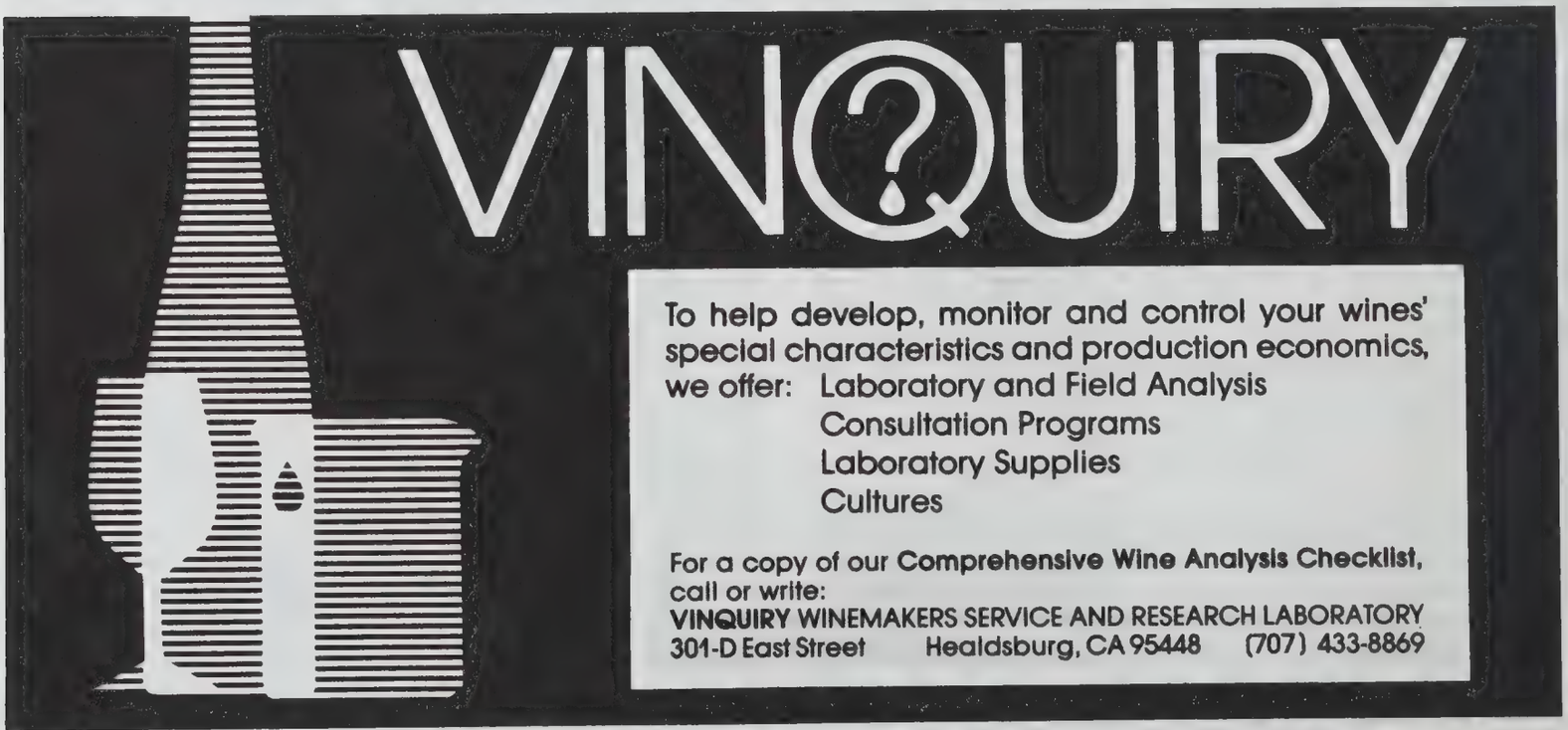
ORIGIN OF THE VARIETY

As with most grape varieties, its true origin is clouded. Basserman-Jordan writes in his **History of Viticulture** that it bears resemblance to a variety, described by the Roman author Plinius (23-79 A.D.), the so-called *Amminiter vine.*

Others believe that King Ludwig, the German (843-876) caused it to be planted along the Rhine, where it slowly displaced the varieties 'Trollinger' and 'Orleans'. Some assume Riesling to be a mutation out of the wild vine, *Vitis Vinifera Silvestris* which grew abundantly along the Rhine.

ORIGIN OF THE NAME

Origin of its name is equally mysterious. Documents report of a *Ruslingwingarten* (wine garden) near the City of Worms in the year 1430 A.D. In 1511 A.D., it appeared again for the first time as *Rissling* in the same vicinity.


VINQUIRY
To help develop, monitor and control your wines' special characteristics and production economics, we offer: Laboratory and Field Analysis
Consultation Programs
Laboratory Supplies
Cultures
For a copy of our Comprehensive Wine Analysis Checklist, call or write:
VINQUIRY WINEMAKERS SERVICE AND RESEARCH LABORATORY
301-D East Street Healdsburg, CA 95448 (707) 433-8869
Circle No. 149 on Reader Service Card

Perhaps it derives its name from the cracked bark (crack = Riss) or its tendency to shatter at bloom due to unfavorable weather conditions (shatter = drizzle = rieseln). Whatever this may be, we now know the variety by many different synonyms.

SYNONYMS OF THE WHITE RIESLING

A variety this old accumulates a multitude of synonyms, often the subject of heated discussion by people looking for an argument—provincial as it may be. Wine has accompanied the human race long before nations claimed 'patent rights' to a name. While Adam and Eve may have gotten their kicks out of apple wine, you can't really blame the immigrants who populated this nation for bringing with them a happy memory and wanting to call it the way they remembered it.

The proper name is 'White Riesling' or, as the Germans call it, 'Weisser Riesling', and I am not opposed to changing it to that. However, I don't think that the American consumer is led to believe that he is drinking a German wine just because it is referred to as Johannisberg Riesling.

German wine became very popular in England during the reign of Queen Victoria. They referred to the Rhine Riesling as 'Hochheimer' after the Rhine town of Hochheim. This later became 'Hock' as compared with the flinty brother grown along the Moselle. The people of Hochheim responded by calling one of the appellations 'Victoriaberg'. If more politicians would drink wine instead of liquor or tea, we might have peace on this planet forever!

SYNONYMS IN GERMANY

Other synonyms, and there are many, derived their names from the locations where they were planted—you are all familiar with the Johannisberger—and there are such things as Rieslinger, Riesler, Hochheimer, Niederlander, Klingelberger, Grafenberger. People from Kastell called it Kastellberger, Kleinriesling, Kleinriesler, Gewürztraube and Pfefferl and you can see why the Germans finally said, "Enough is enough, we are going to call it Weiss Riesling."

SYNONYMS IN OTHER COUNTRIES

France: Riesling Blanc, Petit Riesling, Gentile Aromatique, or Petracine (Moselle)

Italy: Riesling renano bianco, Riesling renano, or Reno, making reference to the Rhine Riesling

Switzerland: Petit Rhin, the small Rhine grape as compared to the Sylvaner which is the 'Gros Rhin', the large Rhine grape

Austria: Rheinriesling or Weisser Riesling

Czechoslovakia: Rezlink, Ryzlink rynsky, or Starovetske

Yugoslavia: Rajnski Rizling, Rizling rajnski bijeli, or Graschevina

Hungary: Rajnai Rizling or Grauer Riesling

Rumania: Riesling de Rhin, Reynai, or Rheinriesling

Bulgaria: Rizling

Russia: Risling or Risling rejnski

South Africa: Riesling

These particular synonyms are all around us and in this country I would say that about 80% of the bottlings are referred to as Johannisberg Riesling, whereas other wineries choose to refer to it as White Riesling.

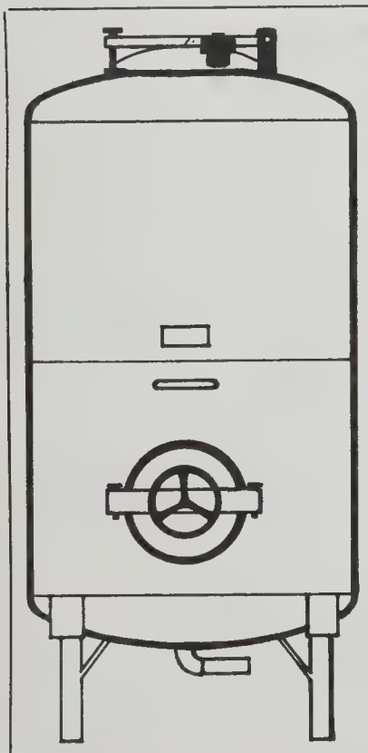
PSEUDO RIESLINGS

No doubt the fame of this variety leads to semantic gamesmanship. The most prominent candidate of this is surely the 'Grüner Sylvaner' or simply Sylvaner. With 31% of the acreage, the largest varietal in the region of Franconia, Germany, it is often called 'Franken Riesling' in this country.

It is not related to the White Riesling. To add to the confusion, the Swiss are calling it 'Johannisberger' or 'Gross-Rhin' (large Rhine) since its clusters and berries are bigger than those of the Rhein Riesling.

Another synonym for the Sylvaner is *Oesterreicher* or Austrian, and it is quite plausible that the variety came from Austria to Germany in the 17th century. Its origin is believed to be a domestic wild vine of Transylvania, now Romania, one time part of the Austro-German empire.

The Sylvaner grape matures earlier than Riesling, has a lower acid and can therefore be planted in less favorable loca-



We Talk Wine

Atlantic Welding offers custom designed products, built by expert craftsmen who take pride in each piece of equipment they produce.

Atlantic Welding has made custom building of stainless steel tanks its' business. Our manufacturing techniques have built-in flexibility designed to handle customer requirements. This flexible approach to providing custom needs has proved to be cost effective in time and money.

Frank Knorr Inc.

ATLANTIC WELDING

600 W. Delilah Rd. Pleasantville, N.J. 08232
(609) 641-1966

Circle No. 128 on Reader Service Card

tions, where Riesling could fail. This is probably the reason why the Sylvaner shows less finesse in warmer climates.

History has it that if the wine turned out well, they called it 'Frentschen Wein' (*vinum francicum-franconian*), and if it was poor, labeled it 'Huntschen Wein' (*vinum hunicum*), wine for the Huns. (This is why I traded Germany for California.)

Sylvaner acreage in Germany is 27,500 or 11.9% of the total vineyard land, ranking it third after Müller Thurgau and Riesling. California grows approximately 2,000 acres. I believe the variety will show promise in the new areas of the Pacific Northwest.

Another non-Riesling is the 'Gray Riesling', which is not the 'Grauer Riesling', the Hungarians call their version of the 'White Riesling'. 'Trousseau Gris' or 'Gray Riesling' is grown principally in the Arbois region of France. California has approximately 2,000 acres, with little reason to expand it. Winkler describes the strong and vigorous grower as yielding a wine of mild spicy flavor but little else.

'Welsch Riesling' is not commercially grown in this country but is quite prominent in South-Southeast Europe: Hungary, Yugoslavia, Austria, North Italy and South Tyrol. It is often referred to as 'Riesling Italico' and produces wines of average quality.

'Schwarzriesling' or 'Müllerrebe' is believed to be a mutant of 'Pinot Noir' and bears the name of 'Pinot Meunier' in France. Its acreage there is over 20,000 and as a member of the Pinot family, is mostly grown for the production of Champagne.

Northwest Wine Lab

also provides

Marketing Services

☐ Audio and Video Cassette Production for tours, sales presentations, and training programs

☐ Radio and TV Commercial Production

☐ Artwork

Suite 10, 86 East Broadway
Eugene, OR 97401 (503) 683-1400
Michael S. Dilley, Consultant
Write for a free "demo" poster

Circle No. 136 on Reader Service Card

RIESLING HYBRIDS

Of considerable interest, are the many genetic offsprings of the 'White Riesling'. While nature produced thousands of accidental genetic crosses and mutants, plant breeders around the world have practiced the art of genetic manipulation in great abandon during the last century.

The main theme usually is to adapt a variety to its environment and to further enhance particular characteristics. The most prominent, named after its breeder, is 'Müller-Thurgau', believed to be a cross of Riesling and Sylvaner in 1882, hence it was often called 'Riesling-Sylvaner'.

Professor Müller, a Swiss from the canton of Thurgau practicing at the Viticultural Institute in Geisenheim, Germany, discovered that vine No. 58 of his many trials was producing a wine of flowery softness as compared to the usually high acid White Riesling. Comprising 27% of Germany's wine grape acreage, Müller-Thurgau is now the most widely planted variety; and in Europe covers 90,000 acres of vineyards. It will most certainly increase in the Pacific Northwest.

The California 'Emerald Riesling' is also the result of crossing White Riesling with another *Vitis vinifera*, although its distinctive aroma leans toward its Muscat parent. Its tendency to brown as a wine interfered with its spread. At last count, there were 2,700 acres on record in California.

Other Riesling crosses are the Ehrenfelser, which is a cross of a Riesling by Sylvaner and probably the most Riesling-like to date, maturing approximately eight to ten days sooner, a very important factor for the Germans. Rieslaner is a cross of a Sylvaner with Riesling, Mariensteiner a Sylvaner with Rieslaner. In other words, a cross with a cross.

Albalonga is Riesling with Sylvaner. Optima is Sylvaner with Riesling with Müller Thurgau. Rothberger, a Trollinger with Riesling yielding a red wine. Kerner, a Trollinger with Riesling yielding an excellent white wine. Bacchus is a Sylvaner with Riesling with Müller Thurgau.

But probably my favorite of all of these crosses is a 1916 event of crossing Sylvaner with Riesling by Dr. Georg Scheu and it was appropriately named Scheurebe. This particular grape furnishes some very interesting taste sensations.

RIESLING SOILS AND CLIMATES

Riesling is very demanding of its location and in the northern viticultural regions should only be planted in the most favorable exposures. That is why it is usually found on the southwest to southeast slopes of Germany and not over 425 feet in elevation.

Soils there should be well-drained and absorb warmth easily. It is quite tolerant as to the type of soil, especially since Germany's viticulture has an enormous variety of rootstocks to choose from, which make adaptation to any soil possible. Riesling is very frost-hardy in winter and therefore shows the least fluctuations in productivity in colder winegrowing regions.

Riesling's fine bouquet and finesse suffer greatly in warmer climates, such as California. That is why it took so long before the Rieslings of California gained consumer acceptance. Technology and know-how in both vineyard and winery helped overcome many of the earlier problems. But there is no substitute for having grown the grapes in the right place.

The process of identifying the most suitable areas is still evolving. Multiple vineyard blends of the past were hiding flaws as well as special attributes of the Riesling. Reading these idiosyncrasies correctly will ultimately bring success in many different styles to all of us.

STYLES OF WINE

The styles of making Riesling and other wines in Germany are highly defined and backed by regulations. They are, for instance, Tafelwein, a pleasant everyday table wine which may be enriched with sugar. Then the Q.b.a.—quality wines with a special pradikat—such as Kabinett, Spatlese, Auslese, Beerenauslese and Trockenbeerenauslese. (Now we know that we are not permitted and shouldn't use these terms here, but we often refer back to them as a comparison.)

For these special types, no sugar or water may be added and they are referred to as 'Naturrein', nature pure. The key to understanding these terms lies in the degree of sugar, or Brix, at time of harvest. Depending on the average maturity obtainable in a given region, each variety and style has its own minimum sugar requirement.

Over years of experimentation in our regions, I and colleagues in the wine industry discovered that some areas are best harvested early in order to preserve fruitiness and finesse, while others respond nicely to later picking in order to reach full maturity.

To differentiate them, we coined the name 'Early Harvest'. This also suggested to the consumer that he might expect a drier, crisper and tarter wine. With many 'Late Harvests' out on the market, it also became necessary to establish a common vocabulary with the hope that it would better describe the styles of wine.

The international trade and particularly the European Economic Community objected to any terminology which was not supported by laws and regulations. A committee appointed by the Wine Institute proposed guidelines which in turn were presented to the Bureau of Alcohol, Tobacco & Firearms for adoption. As soon as this petition wins approval, the following terms will take effect:

Early Harvest, which must not exceed a maximum sugar of 20° Brix. In other words, it should be a wine that was picked relatively early and probably was started to be picked at about 17.5-18° Brix. At Phelps, we generally harvest the Early Harvest at an average of 19°, which gives us a wine that has about 10 1/2-11% alcohol and just a slight touch of balancing residual sugar, perhaps 1.0° Brix.

Late Harvest, which is another term that is going to be defined by law, does not mean that it was picked at 11:00 at night, but it has to have a minimum sugar of 24° Brix at the time of harvest. Late Harvest may or may not have

FINE QUALITY WOOD BUNGS

Clear Douglas Fir
Clear All Heart Redwood
Tank Grade American White Oak

—Made To Your Specifications—

Buy Direct and Save!
Quantity Discounts
(One Size 250 or More)

Direct Shipment to Your Winery

GENE K. NELSON
12786 Old Redwood Hwy.
Healdsburg, CA 95448
707-433-5138
MANUFACTURER OF WOODEN PRODUCTS

Circle No. 135 on Reader Service Card

botrytis in it. You can achieve a late harvest in this country without the help of botrytis fungus.

Select Late Harvest, which would be comparable to a German Beerenauslese, must have a minimum sugar of 28° Brix at time of harvest.

Special Select Late Harvest, should have a minimum sugar of 35° Brix at time of harvest, and that's where we are meeting the German terminology head-on because their Trockenbeerenauslese has to have the same minimum degrees Brix.

WINEMAKING

White Riesling began to make a hit in 1973. The delicate fruit flavors were hardly recognizable in wines of the past. Assuming that they are grown in a reasonable appellation, one should closely monitor the available soil moisture. These varieties easily suffer from stress and assume a papery taste and low sugar free extract.

During maturation, one should test for the relationship of pH, acid and Brix, hopefully in that order of importance. A sharp rise in pH of these grapes—usually upon reaching about 3.25 and up—means that the fruit should be picked regardless of how sweet it is.

Harvesting white grapes early in the day, or with a harvester at midnight assures that they reach the press cool and protected. Warm grapes, sometimes standing around waiting to be processed, undergo undesirable enzymatic reactions, bacterial spoilage and the start of wild yeast fermentations. Some wineries even employ must chillers to cool crushed grapes on their way to the presses.

In my opinion, warm climate Riesling should not be subjected to prolonged skin contact. A cleaner, lighter and more elegant wine will result. If grapes are processed rapidly, it won't be necessary to load them down with sulfur dioxide, 0-75 ppm at the most.

The recent program on **60 Minutes** about sulfur dioxide was quite interesting. I wish we had a forum to respond because you can take any of these things and pull them way out of context and proportion. We are all interested in using as little sulfur dioxide as possible, and the wine industry is working far below the maximum standards set by authorities around the world. Crushing with 0-75 ppm will give you an opportunity to later on add a little just before the wine is bottled. This protects it for longevity.

A high dosage of SO_2 will lead to the formation of aldehydic compounds and extraction of phenolics or tannin bitterness. Common sense dictates the use of higher levels if grapes are unsound, affected by a fungus or something like that which you want to stop in its tracks.

The press that is lowest in the generation of solids is the membrane tank press. It rarely exceeds 2-3% solids in the juice. If we want to make a light, elegant wine that is light on the palate, then it behooves—first of all—to not generate the solids. Then, if there are some, remove them as fast as possible.

I am not a believer of making a separate press wine fraction. I feel that press wine is always part of the original product and if we remove it, then the resultant wine leaves us wanting for some extractives that should be there. What is important, is how we arrived at that press wine, for it to be good quality depends on the type of equipment that we used to extract it.

From the juice strainers and presses, the juice should run through a centrifuge to reduce the solids further to between 1 1/2 to 2%. Going any lower will adversely affect the ultimate wine quality and rate of fermentation. Settling the juice and decanting the juice with a decanting centrifuge, vacuum filter or lees filter is all right, but undesirable flavors, harshness, and H_2S can be passed on to the juice while the solids are settling out. During the settling period, the juice should be cooled to about 10°C and then inoculated.

In California, we are permitted to use tartaric acid if the acid from the grape is deficient. Acidulation with tartaric acid may be necessary if the pH is 3.5 or above. This will lower the pH, cause potassium bitartrates to drop out and make the juice and wine bacteriologically much more stable.

It will also go a long way toward cold stabilization of the ultimate wine. If these potassium bitartrates settle out in the fermenter, then we don't have to chill the wine so much later on to cause the crystals to precipitate.

An acid addition need not necessarily result therefore in a measurable increase of the total acid, but a range of 0.7 to 0.9 g/100 ml is found to be desirable in balanced white wines. Large additions preclude the use of much citric, fumaric or malic acid since their flavor is too obvious.

Citric and malic can also be attacked by bacteria and reduced again, so the most stable form of acid that can be added is the tartaric acid, which of course is entirely natural to wine.

Some winemakers believe in adding two pounds of bentonite per 1,000 gallons to the fermenting juice to increase the inner surface for the yeast and aid protein stability. I have not found this necessary, and it has even complicated life during already hectic times.

Most wineries add pure or mixed yeast cultures—probably a selection of Steinberg, which I would be using—although rarely at the recommended rate of 3% of the total volume. We simply want to help the fermentation process to get underway, and then allow the fermenter to develop its own yeast culture.

Cross-yeasting from once-inoculated tanks no older than one week to some of the newer tanks is widely practiced. Fermentation temperatures for fresh and fruity wines range between 50° and 60°F and are generally automatically controlled by thermostats and cooling jackets surrounding the fermenter. This is one of the things that has given us an edge on making better Riesling wines in California.

Pumping of the product through external chillers is not recommended if you can get away with it. It would involve moving the wine too much. (But it is necessary if the tank is too big.) If the content in the tank is out of proportion to the cooling jackets that surround it, then you generate too many BTU's which simply cannot be removed by the cooling jacket.

I like to employ a mid-fermentation racking at approximately 10° Brix. This will remove the initial gross lees which still consists of more than dead yeast cells. What we have got to remember, is when we start fermenting wine cold, we draw out the rate of fermentation to approximately 25 days and in years past we fermented it in about 6 to 8 days. It didn't really make any difference that the wine was exposed that long to the settlings that formed on the bottom of the tank.

But when we drag out the fermentation to 25-30 days, the first yeast cells that are already settled out at the bottom—combined with some of the cell structure of the grape berries and skins—begin to break down, autolysis sets in, and we might get an off-flavor in the product and a chance of H_2S formation.

NEW, *fabulous* LOW PRESSURE

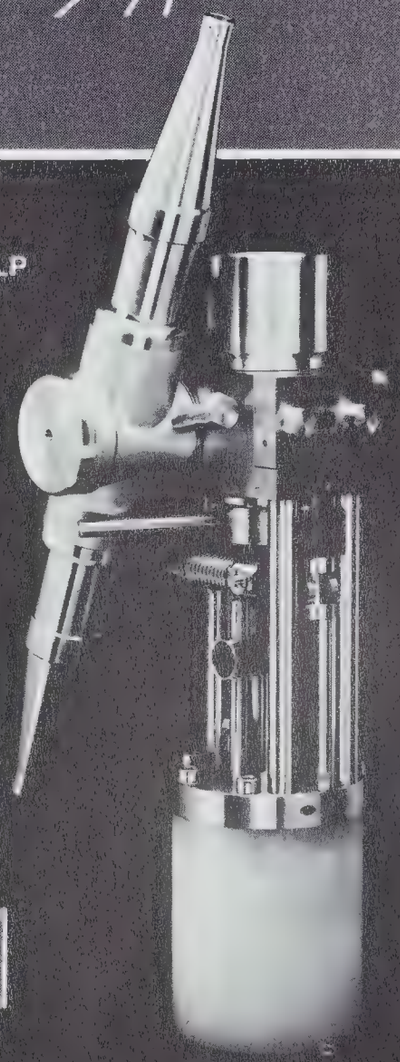
(as low as 10 psi)

360°

tank washer

fury

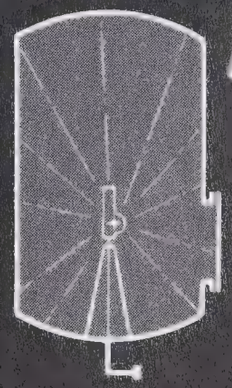
FURY
Model 610 LP
Mark IV

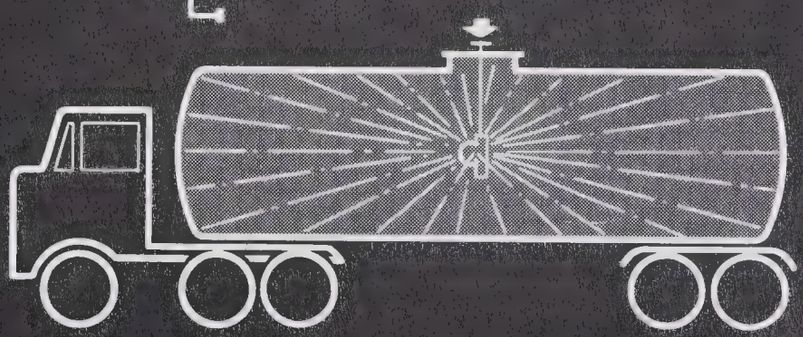


Cleans Wine Tanks thoroughly with use of small, low pressure, low hp – low rpm transfer pumps.

YOUR BENEFITS:

- Fast economical cleaning action with *low pressure down to 10 psi*
- Save energy and water
- New lightweight FURY (2 models)
- Stainless steel with long-life Polypropylene and Teflon
- No lubrication required
- Little or no maintenance
- Exceptionally reliable





DISTRIBUTORS:

Valley Foundry & Machine Works
2510 South East Avenue
Fresno, CA 93717 . . . . . (Tel. 209 233-6135)

The Compleat Winemaker
1219 Main Street
St. Helena, CA 94574 . . . . . (Tel. 707 963-9681)

Utility & Industrial Supply Ltd.
P.O. Box 999
SARNIA, ONTARIO N7T 7J7. . .(Tel. 519 344-3614)

For further information write or call our Sales Dept., Toll-Free 800 645-1510, In New York 516 883-1510

CHEMDET

CHEMDET, Inc.
50 Sintsink Drive East
Port Washington, N.Y. 11050

Circle No. 111 on Reader Service Card

The rate of fermentation is projected over a period of 15 to 25 days, preferably at 1° Brix per day.

For wines to finish with some residual sugar, which is quite appropriate for a wine like Riesling, we can simply lower the thermostat to increase the cooling. Then the yeast gets the chills, turns red, and settles out.

Once the fermentation is throttled, we can use either centrifugation or a diatomaceous earth filtration to remove yeast cells, followed by an adjustment of up to 30 ppm free SO_2 to hold this wine at its desired residual sugar level until it is finally protein stabilized and filtered with a super-tight pad which is capable of removing all microbes.

A wine which is fermented totally dry need only be racked off its sediment so that it can be fined and clarified. We prefer to use 15 ml Kieselsol (30%), 3 grams of gelatin, and 25-250 grams of bentonite per 100 liters for protein stabilization as dictated by a laboratory test.

Cold stability through chilling and/or seeding with potassium bitartrate crystals is best done on young wines so that all wine treatments are completed before the ageing bouquet is formed.

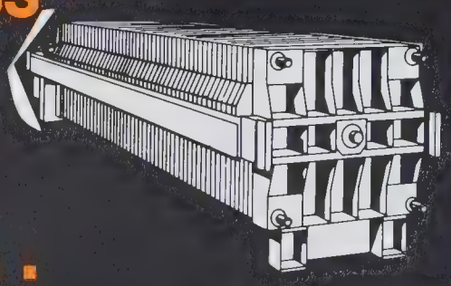
LATE HARVEST WINES

Late harvest wines are very dear to me. I was born and

In the May/June 1983 PRACTICAL WINERY, the SWK Machines, Inc. parent company should have been listed in their advertisement on page 51 as Seitz Enzinger Noll. Phone number for the Bath, New York office should have been (607) 776-4193. PRACTICAL WINERY regrets any inconvenience resulting from these typesetting errors.

In the May/June 1983 PRACTICAL WINERY, the Thermo Systems, Inc. phone number in their advertisement on page 72 should have been (415) 457-3955. PRACTICAL WINERY regrets any inconvenience resulting from this typesetting error.

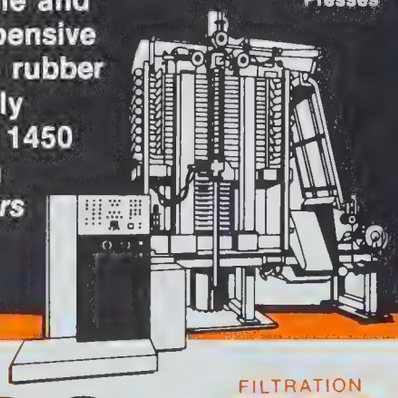
For Maximum Wine Lees Filtration...the HOESCH Diaphragm Filter Press is your best bet...



Fabricated light-weight horizontal filter presses manual or mechanized

The *Hoesch* replaceable rubber *diaphragm* chamber plate decreases overall cycle time, enhances the yield per cycle and eliminates the need for expensive two-stage feed pumps. The rubber *diaphragm* press is currently available in 300, 1200, and 1450 mm sizes with the 800 mm available late 1983. *All filters are of U.S. manufacture.*

Automated Vertical Filter Presses



HOESCH
STANDARD FILTER DIVISION
HOESCH INDUSTRIES, INC. P.O. BOX 461 WHARTON, NJ 07885
PHONE (201) 361-4700 TELEX 13-9115 SFC

FILTRATION SPECIALISTS

Circle No. 122 on Reader Service Card

COMPUTER SYSTEMS TO HELP YOU PRODUCE QUALITY WINE AT MANAGEABLE COST

NOW WITH TWO INTEGRATED CP/M MICROCOMPUTER SYSTEMS

WINERY INFORMATION MANAGEMENT SYSTEM: Case Goods Inventory, Order Entry and Invoicing, Sales Analysis, Payables, Receivables, and General Ledger.

WINERY PRODUCTION MANAGEMENT SYSTEM: Crush, Blend, Percent Composition and History, Tank Ingredients, Wine Chemistry, Barrel, Cost Analysis, Grower Contracts, and Government Forms.

DATA CONSULTING ASSOCIATES
18000 COLEMAN VALLEY ROAD
OCCIDENTAL, CA 95465
707-874-3067

Circle No. 115 on Reader Service Card

raised with them. They mean quite a bit to me; there is almost an ethical involvement with this particular aspect.

We have to remember that late harvest wines in Europe under unfavorable weather conditions are something very precious which cannot be achieved by pressing a button. We risk economic loss by submitting these grapes to become botrytized and could lose our shirt!

So, it is important that we approach this particular subject with great care and also with an eye on the market. Having made too much of it does not necessarily mean that we can sell it for less. There is a commitment of grapes and energy expenditure made in making late harvest wines. People have to go out and selectively pick all these grapes, a cost that we simply cannot get back out of a bottle of wine if we sell it for $6.00-$8.00. So there is an automatic cost factor involved.

As far as making a botrytized wine every year, I suppose anyone who set his mind to it could force this issue and produce one by hook or crook. A winemaker needs to make some basic economic judgements: Does it fit into his program; will it cut too deeply into the winery's grape supply? In 1982, we had so much rain affecting a large crop of grapes that, all of a sudden, we found ourselves almost with more late harvest, than we did with our bread and butter wine, which was the wine that was bringing in the money.

So the question has to be raised, is it economically feasible, or is it just an ego trip? Naturally, making some of it every year is quite a showpiece for the winery. We can deduct the cost of having made it for prestige reasons, and say it goes a long way to getting us friends, and it is always something very, very special.

Having grown up with the pains and joys of producing late harvests, I also feel compelled to respect the resultant product and sense an aesthetic involvement. That is why we are not trying to force this to come along. At Phelps, we haven't made a Sauvignon Blanc late harvest yet because none of the grapes voluntarily got botrytis.

Now, what is the mystery about botrytis? The botrytis fungus is actually omnipresent, it is everywhere. We don't have to go out there and spray botrytis spores on the grapes, they are there. All they are waiting for is a starting shot and the starting shot is two hours of solid water contact; that's how long it takes for the botrytis spores to come to life.

By solid water contact, I mean still water, because if it was raining hard it would actually do the reverse and wash the spores off the grapes. So it has to be almost a mist, and perhaps a situation where it rained for three days, the clouds hang in there, and these little spores really go to work.

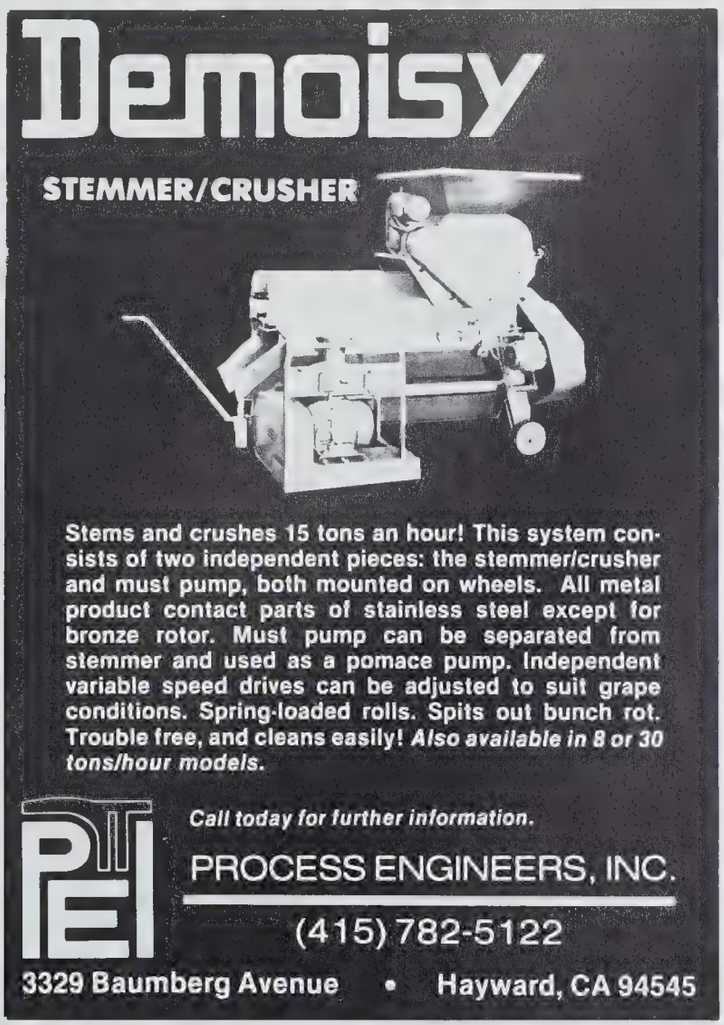
Pretty soon, they become active on the grape skin; botrytis can live both saprophytically and parasitically. In other words, it lives on the dead cell tissue of the vine itself as well as parasitically by sinking a 'thorn' into the berry's skin to extract some of the nutrients.

This spore (botrytis fungus) is interested in seeking nourishment which would mean that you are theoretically reducing the sugar. It seeks to live on the sugar and the acid, but through the mechanical, physical puncturing of the grape skin, we all of a sudden, if the weather turns nice, get a con-

Wine Yeast
and
Malolactic
Bacteria
Cultures

1983 Schedule now
available

Circle No. 118 on Reader Service Card


Demoisy
STEMMER/CRUSHER
Stems and crushes 15 tons an hour! This system consists of two independent pieces: the stemmer/crusher and must pump, both mounted on wheels. All metal product contact parts of stainless steel except for bronze rotor. Must pump can be separated from stemmer and used as a pomace pump. Independent variable speed drives can be adjusted to suit grape conditions. Spring-loaded rolls. Spits out bunch rot. Trouble free, and cleans easily! Also available in 8 or 30 tons/hour models.
Call today for further information.
PROCESS ENGINEERS, INC.
(415) 782-5122
3329 Baumberg Avenue • Hayward, CA 94545

Circle No. 140 on Reader Service Card

centration through evaporation.

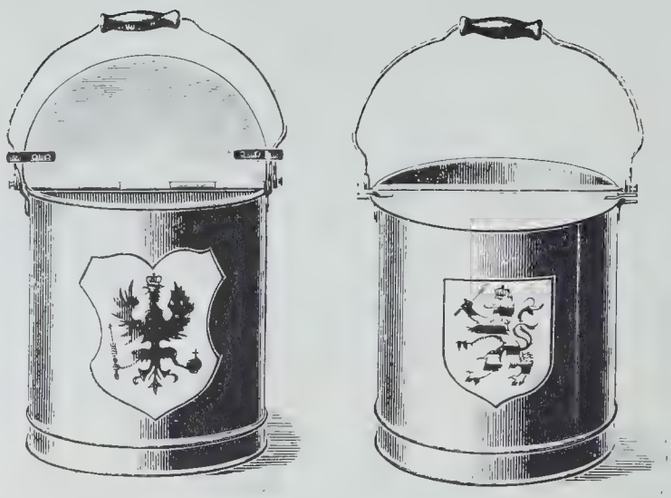
The end result is a net increase in sugar and acid and that's what we are after. So, these marvelous concentrations of flavor that are achieved in these grape varieties are a result of concentrating something that was already there, before.

We cannot make a valuable late harvest product out of grapes that were affected at 16° Brix. The flavors have not developed yet. The botrytis fungus itself actually does not leave a flavor, or not much of a flavor, in the resultant wine. What happens is that the flavors that are there already, are being concentrated.

Actually, the more botrytis we have in a particular lot of grapes, the more the varietal flavor is being diminished. We are then talking about an apricoty or peachy effect, but we are not referring to this particular flavor as a true Riesling flavor, because the effect of the botrytis probably overwhelmed the varietal character.

Let's look at these factors one more time. We have to remember in making such a wine what makes it so costly, is that the initial estimated tonnage of 25 tons to be delivered to the winery has shrunk down to 8 tons. The yield that we would have gotten out of this tonnage and subsequent reduction is due to the dehydration of the grapes. Hand harvesting, which is a must when you want to do selecting for botrytis wines, versus machine harvesting, which of course is a lot cheaper and faster; picking the grapes by the hour versus picking piece rate.

Most of you know that we are paying our pickers by the ton, but all of a sudden when you are asking them to pick these little botrytized berries out of the bunch, they take their sweet time doing that. Extra supervisory personnel is needed to make sure that it is being done correctly. We think it takes almost one supervisor per six pickers to do this correctly.



DIVIDED BUCKETS used in Germany to keep botrytized grapes separate from other grapes.

THE FRENCH
Stone AGE
EST ARRIVÉE

- ***Built tough to last.***
- ***State of the art technology.***
- ***Competitive prices, particularly with weak franc.***
- ***Advice and service from men conversant with all phases of the wine business.***

STONE BOTTLING EQUIPMENT

FILLERS — Up to 52 spouts
CORKERS — 1 and 4 heads
FOIL SPINNERS — 4 to 16 heads
LABELERS — Can apply 3 front and 1 back label
BOTTLE WASHERS — For full and empty bottles

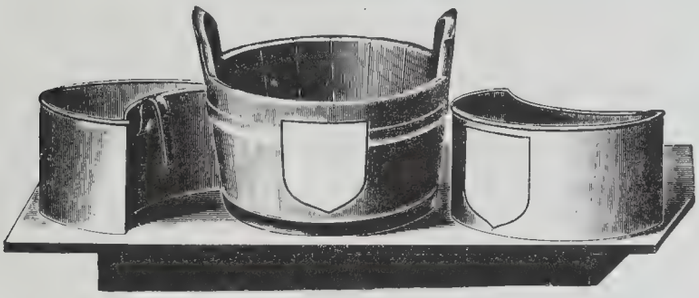
MEL KNOX
1229 Third Avenue
San Francisco, California 94122
415-661-3413
415-661-1616

WINERY EQUIPMENT SYSTEMS
Steve Koster/Dick Wolf
P.O. Box 3361
Napa, California
707-257-1103

Circle No. 129 on Reader Service Card

We give the supervisors a guideline, "Let's pick the grapes that are 50% botrytized or more to make the late harvest into one bin and pick the grapes that are 50% or less affected or still quite green or totally green, into another bin." That is a judgement that has to be made and we have to convey that to the pickers.

Extraordinary tests have to be done to determine when to harvest these grapes. At first, we have pure good grapes, then



SET OF THREE PICKING BINS used in Germany by pickers to keep botrytized grapes separate.

comes the botrytis infection which turns them into a rotten mess, and then the sunshine-through dehydration-hopefully turns this rotten mess into something very noble. We have to go out there constantly and monitor this thing and say all right, I think we've got it now and always with one eye on the weather before it rains again.

The extraordinary handling cost upon receiving these grapes at the winery is enormous. Our equipment quite often is overtaxed and all the fuses blow because the stuff refuses to be pumped.

The possible reduction of the quality of the remaining grapes is also very interesting. Now, we could elect to leave some of these nobly affected grapes in our basic product and therefore elevate the quality of that particular product. If we go and select these diamonds out, the rest may become brass and so we have to make another value judgement there. For which product do I get more money, or how am I going to be marketing the wine?

The special treatment that this wine receives is enormous. The wine is not a successful product until we have it in the bottle, and then many things can go wrong. Remember, we are dealing with spoiled fruit and when we have botrytis out there, we also have the dangers of all kinds of other infections, including acetobacter, so the wine can be high in volatile acidity.

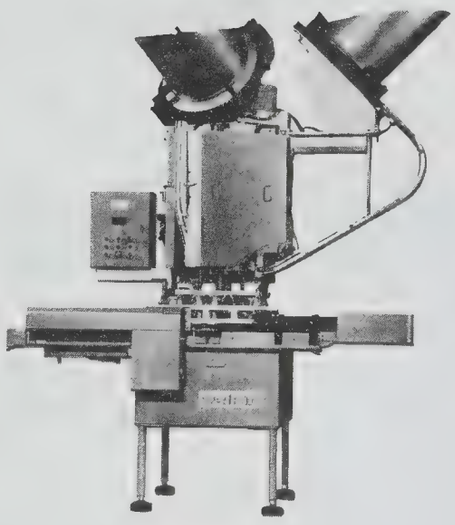
We have one wine which we finally decided had fermented long enough. Well, it did come in at 54° Brix and it was literally almost ready to be spooned. No wonder that the yeast cells refused to tackle the product. Remember, other fruits are concentrated by making preserves. We are evaporating the water out. Well, this is what nature has done for us.

After you consider all these particular aspects, it is small wonder that a select late harvest of about 30° residual sugar, picked at 48° Brix in the vineyard, commands a price of about $25.00 for a half bottle.

But how delicious it is! One little bottle goes around a table of twelve beautifully, and what nicer thing can you do for your friends than to cap an event with such a true elixir of life?

FOWLER/ZALKIN COMBINATION CAPPER-CORKER FOR AUTOMATIC APPLICATION OF ALUMINUM CAPS AND T-CORKS.

Fowler and Zalkin together offer a unique combination of bottle capping and corking experience. Experience that gets the job done.



Zalkin cappers were created in France.

For years they've earned the respect of wine makers around the world.

Zalkin's ***combination*** capper-corker eliminates long changeovers. Independent cams control capping & corking motions. Dual hoppers supply caps or corks to the appropriate heads.

Fowler/Zalkin offers a complete range of freestanding cappers available in sizes up to 12-heads with application capabilities for a variety of closure diameters and skirt lengths.

Zalkin turrets are sized to match filling equipment and bottle design. Retro-fit Zalkin turrets can be perfectly matched to your existing filler, or may be ordered as original equipment from most major filler manufacturers.

Fowler backs up Zalkin's performance with our extensive Parts Department and service.

For answers to your specific capping needs, please contact Graham Selick in Fowler's Sales Department.

FOWLER

FOWLER PRODUCTS COMPANY
Box 1706/ATHENS, GA 30613
(404) 549-3300/TELEX 542-767

Circle No. 119 on Reader Service Card

Gewürztraminer

There are various styles made from many viticultural regions in the United States. In fact, over 100 wines are made in 16 states. We interviewed 14 winemakers on the west coast to determine the differences of climate and vinification.

Marketing of Gewürztraminer – Some wineries have dropped the varietal due to lack of market acceptance, other wineries are increasing production. What are the successful wineries' marketing strategies? What are the winemaker's favorite food pairings with their styles?

Climatically, what is the most suitable region for this grape and are there clonal differences? When is the optimum time to pick the grape and when does the wine reach it's optimum maturity? Does that include a style change from the wine that was released to consumers?

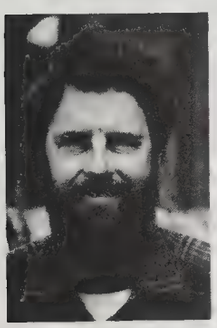
How is skin contact used to affect style? What about the inherent bitterness, do you incorporate it into a dry style or mask it with residual sugar? What does the use of wood do to a wine, known for its fresh, fruity character?

AMITY VINEYARDS

PW: Describe the style and marketing approach:
Myron Redford: Gewürztraminer is probably one of the best suited grapes to Oregon besides Pinot Noir. We increased production from 300 cases in '80 and '81 to 1,000 cases in '82. Until '82, we had to allocate production as demand exceeded supply. With the '82 crush and new grape acreage coming into bearing, we are pushing Gewürztraminer as one of our main varietal releases. I like our dry style with pork, salmon, curry, sausage, and sauerkraut.
PW: Describe the vineyards:
MR: Cool springs don't allow good fruit set, you get tiny clusters and tiny berries and yield can range from 1-6 tons/acre. '82 was our best gewürz harvest ever. The critical factor is if June is cool and wet, production can be as low as 1½ tons/acre, but if June is dry and warm, 4-6 tons/acre is possible.

The estate vineyard is rated 2,100-2,400 heat units/year. 60 buds are left on the vine which flower in June. I buy grapes from the Red Hill Vineyard in the Umpqua Valley which has a warmer spring and consistently produces 2-3 tons/acre. I also buy grapes from the Wirtz Vineyard in Banks, Oregon, a warmer area of the Willamette Valley.
When are the grapes picked?
MR: Harvest criteria includes checking acid and sugar levels and the weather. I want low acid, less than 0.8 and 0.7 is ideal with a pH of 3.4. Picking at a low acid level minimizes the characteristic bitterness of Gewürz. Grapes at 21.0° Brix are ideal for the desired flavor, and not over 22.0°.

The estate is usually picked about October 11-12 and has ranged in the last three years from 19.6-21.4°, 0.63-0.7 acid, and 3.45- 3.5 pH. Redhill has been picked between October 9-15 with 20.6- 22°, an average acid of 0.8 and 3.55 pH. Wirtz has been picked between October 10-12 with 19.0-22°, 0.54-0.64 acid, and 3.4-3.6 pH.
PW: How is the wine made?
MR: Gewürz is very sensitive and receives 0.07 grams/lb SO_2 at crush. I first experimented with skin contact with the '82 vintage. A 400 pound lot received 48 hours and did achieve more varietal character and I plan to continue skin contact experiments.



Myron Redford

Free run and press juice are combined, settled overnight, racked off and inoculated with Champagne yeast with the juice temperature between 50-55°F. Fermentation temperature is maintained in the mid 50's. Near the end of the '82 fermentation, about 8 lbs/1,000 gallons of bentonite is added to help clarify the wine, compact the yeast lees and achieve heat stability.

I believe that adding bentonite prior to completion of fermentation instead of after in previous years, may have stripped less character from the wine.

Northwest wines are high in polyphenyloxidates which tend to oxidize quickly without adequate SO_2 protection during processing. After fermentation, a medium tight DE filtration is done followed by a 40 ppm SO_2 addition. A polish DE filtration is followed by a 20 ppm SO_2 addition. The wine receives another pad filtration and 0.45 u membrane ahead of the filler. One year of bottle age really helps develop bottle bouquet and spiciness.

David Lake

ASSOCIATED VINTNERS

PW: Describe the style and marketing approach:
David Lake: The style is totally bone dry in the Alsatian style, a classic matchup to smoked salmon and rich fish dishes. 60% or more of production goes to restaurants. '81 had .05 residual sugar and '80 had .075 RS.

The wine bottled early (in March or April) with residual CO_2 has floral, spicy character. '80 was a slight deviation with more perfumey character than normal. '81 had straight spice with higher acidity. AV doubled production to 1500 cases in 1981 from 1980, and increased another 25% with the 1982 vintage.
PW: Describe the vineyards:
DL: Grapes come from the Sagemoor Vineyard on the Columbia River Basin in eastern Washington and vineyards in Yakima Valley. Sagemoor grapes, 200 feet above the river, have strong, spicy Gewürztraminer character, are very perfumey, and have low acid levels. Grapes mature earlier in the 3,000 degree day climate with a lot of wind.

Yakima Valley grapes are more reserved (more Alsatian), more austere, and have more backbone and depth. At 1,200 feet elevation in a 2,600-2,700 degree day climate, the grapes take longer to mature.

There is a similarity of geography between eastern Washington and Alsace. The Yakima Valley next to the

Cascade Mountains has a 'rain-shadow' climate, as does Alsace on the leeward side of the Vosges Mountains. Annual rainfall is 10 inches in Yakima Valley, 20 inches in Alsace. Sagemoor Vineyard is sprinkler irrigated as is one Yakima vineyard, while the other Yakima vineyard is furrow irrigated.

Blends have consisted of 2/3 Sagemoor and 1/3 Yakima Valley in '80, 50-50 in '81 when the climates were very similar, and 2/3 Yakima Valley and 1/3 Sagemoor in '82.

All vines are bilateral cordon pruned to yield 4-5 tons/acre and leave reserves for the typical cold winter of several days at 0°F or below. Sagemoor has sandy, well drained soil with some limestone left after ripping of the Caliche (lime) sub soil before planting. Yakima Valley has richer sandy loam also with some limestone left after ripping when planted.

Sagemoor was planted in 1970-71 as was some of the Yakima Valley vineyards, while other Yakima vineyards just started producing in '81. Bud break is typically in the third week of April with harvest between the third week of September and first week of October.

PW: When are the grapes picked?

DL: To determine harvest, taste of the grapes is just as important as numbers. A pink blush is not as important as good, spicy taste. First criteria is acid, usually 0.69-0.75. The second factor is sugar; 20.5-21.5° Brix in order to make a wine between 11.8-12.15% alcohol. pH can be a major consideration at picking and is typically 3.2-3.4.

PW: How is the wine made?

DL: Grapes arrive after an overnight drive from the vineyard at about 60°F and receive 50-75 ppm SO_2 at crush and 4-8 hours skin contact. Free run and press juice are fermented separately with Champagne yeast between 50-55°F to dryness.

When fermented dry, the wine is racked off the lees, SO_2 adjusted to 35-40 ppm and racked twice more before Christmas, and held at the cellar temperature of 50-60°F. Bentonite addition for heat stability ranges between 4-10 lbs/1,000 gallons with the average between 6-7 lbs. Cold stabilization is done for three weeks at 38°F following bentonite addition.

A rough pad filtration is followed by a polish pad filtration ahead of the filler and the wine is bottled with 35 ppm SO_2. Typically, the wine is bottle aged six months before release. The wines will mature, plateau about one year after bottling. Higher acid levels do hold the wine back.

The wines do have good ageing ability, and there are vintage variations. The spice gives way to a mint character as it ages. Bitterness has not been a problem in the wines, bitterness shows up much more in Riesling.

BALVERNE

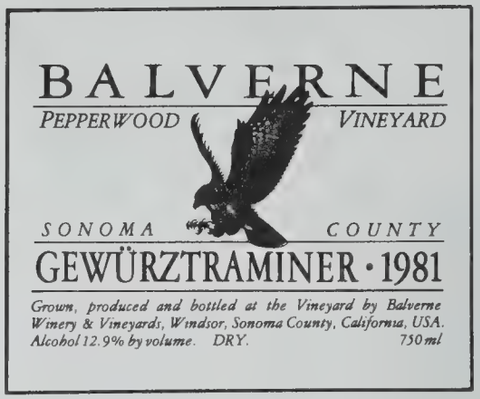
PW: Describe the style and marketing approach:

Doug Nalle: Balverne's goal for Gewürztraminer is a dry dinner wine which matches up to shell fish. It is received well in upscale fish restaurants according to Bill Bird, winery president. 90% or more is sold in California.

Gewürztraminer is bottled with below sensory threshold residual sugar of 0.4-0.6, which covers up the inherent bitterness from skin contact which is done to increase flavors. Malo-lactic fermentation is induced on 25-50% of the blend to add an additional component. Wood ageing takes the 'stainless steel baby fat' character off the wine.

PW: Describe the vineyards:

Doug Nalle


BALVERNE
PEPPERWOOD VINEYARD
SONOMA COUNTY
GEWÜRZTRAMINER • 1981
Grown, produced and bottled at the Vineyard by Balverne Winery & Vineyards, Windsor, Sonoma County, California, USA.
Alcohol 12.9% by volume. DRY. 750 ml

DN: Pepperwood Vineyard on the Balverne estate, east of Windsor, was planted in 1975 and has loam with volcanic ash and quartzite at 250 foot elevation in a high region II area. Vines are pruned long and thin to leave four canes, the set sized up, and then pruned for 3 1/2 tons/acre yield.

PW: When are the grapes picked?

DN: Gewürztraminer takes about a week longer to mature here than Alexander Valley. We pick by pH and sugar, aiming for 3.3-3.5 and 22-23.0° Brix. Grapes are hand picked only in the mornings and/or cool overcast afternoons.

PW: How is the wine made?

DN: No SO_2 is added at the crusher and about 75% of the grapes receive skin contact between 3-20 hours at 50-55°F. After pressing, the juice is settled 24-36 hours before racking and inoculation. 30 ppm liquid SO_2 is added to lots not planned for malo-lactic fermentation. Non m-l lots receive tartaric acid additions before inoculation to reach approximately 3.3 pH. The highest pH juice lots are allowed to go through malo-lactic.

Champagne 595 yeast is used for efficient primary fermentation. Lots planned for malo-lactic are fermented in stainless steel between 65-70°F and inoculated with PSU-1 during primary fermentation. The tank is kept warm until malo-lactic has finished.

Non malo-lactic lots are fermented in stainless steel or 2,000 gallon French oak uprights. Stainless steel fermentation temperatures were 60°F in '80, and 65°F in '81 and '82. Upright temperatures peak at 80°F. All but one 2,000 gallon lot are fermented to dryness. The single lot is stopped at the appropriate Brix to bring the master blend back to 0.4-0.6% residual sugar.

All lots receive an additional 2-4 lbs/1,000 gallons bentonite to achieve heat stability and are cold stabilized at about 32°F for about 10 days, depending on alcohol and acid levels. A polish pad filtration is done ahead of a 0.45 *u* membrane in line to the filler. SO_2 at bottling of 30-35 ppm depends on the wine's pH. The wine goes through a cycle from fruity to dumb to youthful maturity during nine months of bottle ageing prior to release.

EVENSEN VINEYARDS

PW: Describe the style and marketing approach:

Richard Evensen: The vineyard was purchased in 1966, previous vines removed in 1974, and Gewürztraminer planted in 1974-75. The property is mid-way between Oakville and Rutherford on Highway 29. The property had a wide assort-

ment of grapes planted, but I liked Gewürztraminer the best. I liked the style made at Stony Hill Winery in Napa Valley, and obtained my budwood from Stony Hill's vineyard.

I sold my grapes to Allied (United Vintners) the first two years and made some wine at home. The instability of the grape market motivated me to produce wine commercially, so two stainless steel tanks and related equipment were obtained for the 1979 crush. Today, United Vintners is not buying any additional Gewürztraminer grapes. A third tank was added in 1981, to be followed by one more before the '83 crush.

Our style is similar to Stony Hill, but drier—Alsatian. It goes well with pate, Choucroute (Alsatian sauerkraut), goat and other strong cheeses, a good afternoon sipping wine. It goes with some foods such as rack of lamb, oriental foods, and leg of lamb.

Of the approximate 1,000 cases we have made each year since 1979, about 50% goes to restaurants of many food orientations, many in northern California, while the remainder goes to Northern California retail outlets. I plan to buy additional grapes and increase production in the future.

PW: Describe the vineyards:

DE: Our six acres is in a very cool area of Napa Valley, about one mile from the U.C. Davis test station, getting a lot of afternoon winds. In March, April, May, this cool area can have a frost problem, and we use wind machines quite a bit.

Three tons/acre come off the cordon trained vines. Spur or cane pruned vines would produce clustered bunches more inclined to bunch rot.

PW: When are the grapes picked?

DE: Our grapes have been picked as early as August 29, but always by the middle of September. I check the vineyard daily to pick at 21-22.5° Brix with as much acid as possible: 0.6-0.65 with a pH of about 3.4. Within our valley floor six acres, we get lower acids in the western half, higher acids in the eastern block.

PW: How is the wine made?

DE: 40 ppm SO_2 is added normally to crushed grapes, more to very ripe grapes. No skin contact was done in '79, 24 hours was given in '80, and I have settled on 12-14 hours since, to obtain the optimum amount of fruit and bouquet. Acid addition with tartaric is done rarely and if so, only to raise the acid 0.05.

After pressing, juice is settled one day or more while chilling to make sure the juice is 50°F after racking, when inoculated with the German strain of Steinberg yeast. Sometimes, I have had to warm the juice up just a little to get fermentation to start, but then hold it at 50°F.

Fermentation to dryness can take as long as 50 days. The wine is usually racked at about 3° Brix and then racked again upon reaching dryness. An average of 9 1/2 lbs/1,000 gallons of bentonite has been added to achieve heat stability and that takes 1-4 weeks to settle while at 50°F.

Racked off the bentonite, the wine receives a coarse pad filtration followed by further maturation in the tanks at 50°F. No cold stabilization is done as such, although some tartrates drop out during the cold fermentation and tank maturation periods. A sterile pad filtration is done just before bottling. The wine passes through a sterile membrane on the mobile Chateau Bottling unit.

I hold the bottled wine two to three months or more before release. The '79 and '80 vintages are still on a good plateau in early '83.

Dick Evensen

FELTON-EMPIRE

PW: Describe the style and marketing approach:

Leo McCloskey: I use European wines as benchmarks, making two styles, one closer to the Alsatian, the other closer to the Germanic.

Our Talmadge Town Gewürztraminer is truely an Alsatian style, in that it has a clove-like quality. There is another style that is much more floral but simple, reminiscent of Muscat. I like both styles, the latter being more exemplary of the California style. The clove-like quality you get from Mendocino County is much more Alsatian.

We have tended to market our Gewürztraminer as part of our Maritime Series, which means a blended wine from two vineyards; Tepusquet in Santa Barbara County, and another vineyard in the North Coast. Now, we are moving into marketing a single vineyard, Talmadge Town.

But we feel that Gewürztraminer hasn't been ferreted out as to its best region; it isn't ultra-refined in California, so we don't mind blending. I feel that our emphasis is on selling Gewürztraminer as a Riesling variety. The wines are made to age.

That's the whole thrust of traditional winemaking. Any fine wine will age seven years. You must provide wines that will develop in the bottle, which means they won't lose value in the bottle.

PW: Describe the vineyards:

LM: Tepusquet is Region II, with low rainfall. It is a chaparral-grassland, as opposed to Mendocino which is a true chaparral-woodland. The sum of the bio-geography is very different, and that changes the varietal character of the wine.

The sun is in the sky longer at Tepusquet. The soil in both areas is gravelly, but much more so at Tepusquet. Both are hillside vineyards, cordon pruned between 12 and 20 buds and have drip irrigation. The cool spring causes a light fruit set, so at Tepusquet, the yields have been as low as 8/10 of a ton/acre and average about 2-2.5 tons/acre.

Talmadge is similar. Typically, they'll bud out around March. We invariably pick at Tepusquet between September 22 and 27. At Talmadge, picking runs into early October (late October in '82).

PW: When are the grapes picked?

LM: I like to pick at 20.5° Brix, because that gives the wine an intense clove-oil quality in the nose. If you wait longer,

Leo McCloskey

you're going to give intensity to the body and tannin of the wine. pH of the '82 Maritime Gewürz is 3.18 and on the Talmadge Town, 3.1. The Talmadge pH was 3.1 both at harvest and at bottling, without an acid addition.

PW: How is the wine made?

LM: 15-60 ppm SO_2 is added at the crusher, depending on the condition of the grapes. Grapes on the vine a long time will get closer to 60 ppm SO_2. Bentonite, equal to 3/4 of what it took to make the previous year's wine protein stable, is also added at the crusher.

Skin contact at 60°F lasts 8-16 hours. Grapes are pressed rapidly in a tank press and the final pressing is evaluated for its color. If it looks good, it immediately goes with the rest of the juice. Steinberg yeast, started in Riesling must, is used. Steinberg is a weak yeast, so about 4% must be added to get fermentation going.

Fermentation begins while the juice is about 41°F, and peaks at about 47°F during a 21-35 day fermentation. Fermentation is arrested at about 1% residual sugar by chilling the wine. The wine is settled for about two weeks at 29°F until clarity becomes apparent, and then centrifuged. About six tastings with different acid levels are done to determine what the acid will be. Tartaric acid addition is preferred.

Some of the Talmadge Town Gewürz was put into American oak cooperage for evaluation. We determined that oak ageing would be beneficial and about 40% of the Talmadge Town lot was cycled into well-seasoned barrels for about 20 days. The wine was bottled with 20 ppm SO_2 and passed through a 0.65 *u* membrane at bottling.

Bitterness first comes from bio-geography. Phenolics are metabolized better under hotter conditions, so you get more phenolics, more bitterness from warm climate Gewürz. Gewürz is less bitter from the cooler climates.

There is more natural bitterness in the Riesling varieties than in Chardonnay varieties, bitterness that a little residual sugar can mask. Most California 'dry' Rieslings are at 1.8-2.2% residual sugar. Wood ageing will eliminate some of the bitterness. By barrel ageing, we are able to keep our sugar at just 1%.

GUNDLACH-BUNDSCHU

PW: Describe the style and marketing approach:

Lance Cutler: Gewürztraminer was first made at Gundlach Bundschu in 1977 and has been made in a dry style consistently year after year. The wine has Gewürztraminer spice, fruit and varietal character but is picked at lower sugars to minimize the softer, sweeter perfumy character.

The wine matures in 1-2 years, and goes well with soups and seafoods; and is a big success with restaurants. The fact that fewer wineries are making Gewürztraminer is to our advantage. 2,000 cases were made in '82 and 3,000 cases are planned for the '83 vintage. The wine has been estate bottled since '80.

PW: Describe the vineyards:

LC: Traminer vines were brought over from Germany between 1860-1864 and planted in two vineyards in Sonoma Valley, rated cool region II. One vineyard has shallow, clay-bearing soil, three feet deep at best; the other has heavy alluvial soil.

There are no set or shatter problems, but crop levels of the vines pruned to two canes do vary between 2-3 tons/acre with a 2 ton average. The alluvial block five miles northwest of the winery ripens up to two weeks earlier than the block adjacent to the winery.

PW: When are the grapes picked?

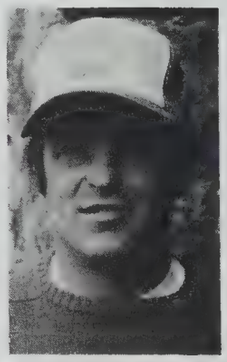
LC: I watch primarily the acid and pH, seeking acid as high as possible, 0.8-0.9, and pH as close to 3.0 as possible. To achieve a low alcohol wine of 12.5% or under, Brix will be about 21.5°.

PW: How is the wine made?

LC: Grapes are picked in the morning to arrive cool at the winery and if the grape's condition allows, six hours skin contact is given after crushing and addition of 50 ppm SO_2. After pressing, the juice is chilled and settled for two days. Unless there is pinking in the press juice, free run and press are combined for inoculation. Press juice that has pinking is treated with up to 1 lb/1,000 gallons of PVPP to drop out the color, but this has only been done one year, so far.

Acid additions with tartaric acid are done at the crusher. Sugar links dramatically with acid, with grapes above 21.5-21.7° Brix, an acid of 0.9 may drop rapidly to 0.60.

Champagne yeast is used in 50°F fermentation. When the wine reaches about 2° Brix, the fermenting wine is tasted continually to determine the best balance between sugar and acid. Fermentation is usually stopped with a centrifuge between 0.3-0.8° Brix. The '82 vintage was stopped at an average of



Lance Cutler

0.4, which left no bitterness, a character which could develop, if the wine was fermented totally dry.

3-5 lbs/1,000 gallons of bentonite is used to achieve heat stability which takes 1-3 days to settle out. The wine is chilled down to 28°F for one week to achieve cold stability. Depending on the wine's pH, SO_2 adjustments are made with each wine movement to maintain 20 ppm free.

A tight DE filtration is given and the wine goes through a 0.45 *u* membrane ahead of the filler at bottling with 25 ppm SO_2. The wine is very fresh, crisp, and fruity at release, and matures and complexes with a couple of years bottle age.

Bob Magnani

GRAND CRU VINEYARDS

PW: Describe the style and marketing approach:

Bob Magnani: Grand Cru style is dictated by the fruit. I personally like a more Germanic style. If I had the fruit appropriate to that dry style, I would consider making it. Fruit in Alexander Valley and other parts of California must reach a higher sugar level to be ripe.

The wine is rich, supple, mouth filling, spicy, aromatic, with lingering flavors and has 1½-2% residual sugar. It is not a dull sweet wine, it has complexities in the mouth. It is too sweet for a food wine and not sweet enough for dessert. Jim Miller's Garden Creek Ranch grapes really fit this moderate 12.5-12.8% alcohol style.

The greatest percentage is sold retail, mostly purchased one bottle at a time—very few case sales. 4,000 cases/year were produced from 1978-1981. Almost 5,000 cases were made in '82 with 6,000 cases planned for the '83 vintage.

PW: Describe the vineyards:

BM: The vineyard is in a unique micro-climate rated low Region II. The vineyard block is set against the hills creating an up-draft which prevents against frost. The vineyard of deep rich loam soil was budded in 1972 from the Robert Young Vineyard next door with, supposedly, the Wente clone.

Originally, the cane-pruned vines yielded 2 1/2 tons/acre which was increased to 5 tons/acre. Restricting tonnage by pruning methods alone with severe cane pruning presents the problem of a third crop being thrown about two weeks behind the first, making picking difficult.

In 1980, a four-acre block was converted to cordon training and there was a dramatic improvement in maturity and quality of the cluster, ease of picking, and better control of vigor. All vines on good soil are being converted. The goal is a controllable 4 tons/acre which is a good balance between good wine and a good return for the grower.

PW: When are the grapes picked?

BM: I determine harvest with a combination of taste and numbers modified by eight years of experience with the same vineyard. Garden Creek grapes never achieve a completely solid purple, russet color; they have an amber hue, a golden rust color at harvest.

From experience, I have found that fruit is ripe at a certain level of Brix and taste. 22.5° Brix is the absolute minimum, 24.0° is the high. The historical average is between 23-24°.

We encourage botrytis by not using benolate or captan before bloom, and we only spray with dusting sulphur. We like to see 20-30% botrytis infection which adds a certain degree of lushness and complexity. 20-40% is typical.

Grapes have been picked as early as the second week of August, and as late as the second week of September, but are usually picked in the first week of September. Grapes are hand picked beginning early in the morning until noon. Machine harvesting on cordon trained vines was tried successfully in 1981 when a mechanical harvester was available and might be used again if the equipment is available.

Grapes from the long, cool growing season of '82 were picked at 23° Brix while the warm short season of '81 produced grapes at 24° Brix with some botrytis. Typical pH is 3.5, the best has been 3.4, the worst 3.6, and the acid is 0.55-0.60.

PW: How is the wine made?

BM: 30-50 ppm SO_2 or less is added to grapes at the crusher depending on the temperature and condition of the grapes. Grapes are pumped into tanks under a CO_2 blanket. CO_2 is bubbled into the tank to de-areate the juice.

Average skin contact time is 15 hours, a time developed by trial and error with the particular vineyard grapes to gain aromatics and flavors, tannins (bitterness) which is a positive attribute when residual sugar is present. Vertical-bar dejuicing screens running the length of the 3,000 gallon tanks, help produce over 100 gallons/ton of free run.

Press juice is settled separately overnight to reduce solids of 2 1/2-3% to 1-1 1/2%, racked and mixed with free run juice in 10,000 gallon fermenters. Press lees are processed through a centrifuge and the juice mixed into the fermenters. Acidulation with tartaric acid is done to raise 23° Brix juice to 0.9 acid or 24.5° Brix juice to 0.95 acid which would drop the pH to 3.25- 3.3.

I have experimented with other yeasts, but still use Champagne, which is moderately vigorous, easy to manipulate, and a clean fermenter. Juice at about 40°F is inoculated and allowed to peak at 60°F, brought down and maintained at 50-55°F.

At about 2° Brix, residual sugar analysis is done to plan arresting between 1-2% RS while lowering the temperature to 40-45°F. The wine's temperature is dropped to 30°F in 24 hours to stop fermentation.

While racking under CO_2, the free SO_2 level is adjusted to 30 ppm and protein levels are checked for determining the exact bentonite addition—usually between 6-9 lbs/1,000 gallons. Bentonite settling occurs during cold stabilization at 28°F between 2-3 weeks.

Wine is centrifuged cold and allowed to warm up to 60°F

to allow the CO_2 to dissipate. A rough pad filtration is followed by an analysis of the wine's balance. Trial lab acidulations are made with citric acid, or a combination of tartaric and citric if more than a 1/2 point increase seems to be needed. Citric acid addition is important, as it adds a degree of freshness which is very desirable at this sugar level. Acid addition is done a month or more before bottling.

A 2% RS wine will have a typical acid of 0.8 or a 2.5% RS wine—a typical acid of 0.825, but they are varied by the pH. A sterile pad filtration is done one week before bottling. Wine is bottled with 30 ppm SO_2 and passes through a 0.65 *u* membrane ahead of the filler. The bottling tank is pressurized with CO_2 instead of nitrogen which might strip the wine, and all bottling is carried out under CO_2. The wines mature 8-12 months after bottling and plateau for 1-2 years when the bottle bouquet marries with the grapefruity, citrusy qualities.

HACIENDA WINE CELLARS

PW: Describe the style and marketing approach:
Steve MacRostie: We have dropped the residual sugar level on Gewürztraminer over the last several years from 1.25, down to 0.7, to make the wine better suited to food. The wine goes well with spicy foods: curry dishes, Chinese food, turkey, and California cuisine (experiments with herbs in food). The slight residual sugar helps mask the characteristic bitterness.

We find a lot of consumer interest in Gewürztraminer. It is an interesting variety, a good introductory wine, soft, easy, simple. After producing 2,000 cases for several years, we have increased production to 3,000 cases per vintage.

Our style is what the fruit gives you. The young wine is grapefruity; in its second stage there is a lychee nut character with 6-18 months bottle age. It ultimately reaches a classic, spicey, muscaty maturity. In a recent vertical tasting at the winery, the '76 vintage still showed very good spicey character.

PW: Describe the vineyards:
SM: Hacienda buys grapes from two vineyards in Sonoma County for the differences the two vineyards contribute and the combination they make. Rancho Alta Vista Vineyard in Sonoma Valley is dry farmed, cane pruned to produce about 2 tons/acre on a steep, hillside at 1,200 foot elevation and rated high region II. The hand picked, well drained vineyard of white, chalky volcanic soil was planted in 1974.

Grapes ripen about a week later in the Hafner Vineyard in Alexander Valley which is warmer than the other vineyard and produces good, even ripening at 4 tons/acre. The vineyard has deep moderately heavy soil and is cordon pruned. Grapes are mechanically picked at night and a 5-ounce bag of potassium meta-bisulfite is sprinkled throughout each 2½ ton gondola to prevent browning. Hafner grapes are very intensely flavored while Alta Vista grapes are less intense and more delicate.

PW: When are the grapes picked?
SM: I'm a firm believer that you need a little extra ripeness in Gewürz to get the character that you want. I look for color and taste the grapes, looking for the muscat character which fermentation changes dramatically. It's the one variety you can really evaluate by tasting. Some clusters develop a fraction to 1/2 or more total russet color, the average is 1/2 fully russet color.

As the color develops, I taste the fruit and believe 22-22.5° Brix to be optimum. Alta Vista grapes average 0.9 acid and 3.3 pH while Hafner grapes average 0.7-0.75 acid and 3.5 pH. In '82, we received the first botrytized grapes from Hafner at a level of under 5%, which was not deleterious.

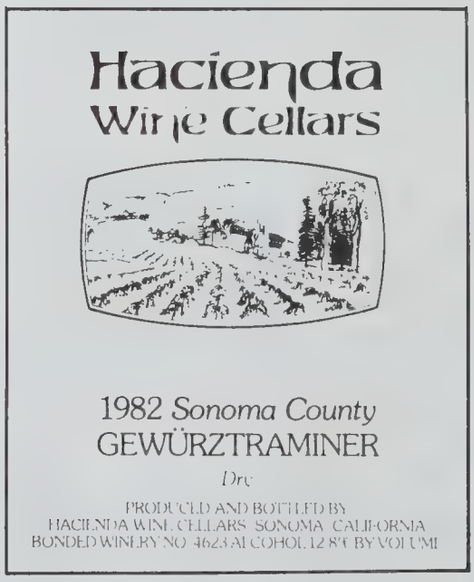
PW: How is the wine made?
SM: Alta Vista is picked early in the day to deliver grapes with 60°F or less temperature and receive about 75 ppm SO_2 at the crusher. Hafner grapes receive supplemental SO_2 at the crusher to achieve 75 ppm so that there is 50 ppm after pressing. Average skin contact time at 50°F is overnight (12 hours) with Alta Vista getting 15 hours, and Hafner 9-10 hours.

'83 grapes will be pressed in a new membrane press and the juice settled for 1-2 days as cold as possible (35-40°F), racked, and the juice lees filtered (recovery is five cases of wine/ton of grapes). Having tried Steinberg, we use Champagne yeast which is more efficient.

Acid addition is done just before inoculation with tartaric acid to raise the acid level to 0.9. Fermentation is at 45-50°F or a drop of 1-1 1/2° Brix per day. The temperature is cranked down when the goal of about 0.7 RS is reached in relation to the balance of pH, alcohol and total acid. The wine is then racked off the yeast lees and the SO_2 raised to 30 ppm free.

4-5 pounds/1,000 gallons of bentonite is used to achieve heat stability followed by settling at 35°F. A coarse DE filtration follows with an SO_2 adjustment to 30 ppm. The acid-sugar balance is checked by tasting and might be corrected with a malic acid addition. A polish pad filtration is followed by warming the wine to 60-65°F in order to get the CO_2 gas out of the wine. Usually, warming the wine is sufficient, and only as a last resort, is the tank of wine sparged with nitrogen to drive out the CO_2.

A 0.65 *u* membrane is ahead of the filler and the wine is bottled with 30 ppm free SO_2. Bottling is in December, and the wine is bottle aged three months before release.



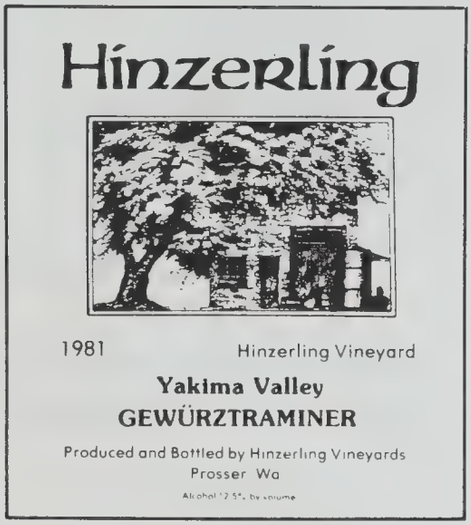
Steve MacRostie

HINZERLING VINEYARDS

PW: Describe the style and marketing approach:
Mike Wallace: Gewürztraminer is not well understood by the consumer. People are 1) confused by it, 2) hate it, or 3) love it!

Hinzerling Gewürztraminer production began in 1976 from a 16 acre vineyard block outside of Prosser, WA. 80% of the production has been in a dry style designed to go with food, with 20% made in a sweeter style. I like the dry style with oysters, crab dishes, and curry dishes and over half the production goes to seafood restaurants.

Mike Wallace



It is a delicate wine with good acid levels (0.65) with a rose petal aroma and without pungent Gewürztraminer character. There is a limited market for dry Gewürztraminer, but good demand for late harvest lots.

PW: Describe the vineyards:

MW: The Yakima Valley vineyard is sloped to the east and south, has loamy sand which is mostly shallow and light, and is drip irrigated to complement the seven inches of annual rainfall. Vines are spur pruned to yield between 3 1/2-5 tons/acre with a 4 ton average. There is an average of 2400 heat units/year. Bud break occurs in the middle of April, followed by bloom in the middle of June.

PW: When are the grapes picked?

MW: Typical harvest is about September 23, plus or minus five days. Wallace has picked dry lots in the past at 23-23.5° Brix, but now picks at about 22° Brix, watching for a pH between 3.2-3.3 and an acid of 0.65-0.75. Wallace notes a lot of purple in the grapes at 22°!

I want only a delicate spice aroma of the fruit. Picking at too high sugar gives too much perfume. High pH and low acid is avoided due to the unpleasant aftertaste it creates in the wine.

Irrigation is cut back on August 15, and turned on again after harvest for protection against winter frost, which can occur between October 15-November 1.

PW: How is the wine made?

MW: 10-12 tons are picked to fill one 1,500 gallon fermenter for the dry lot. Hand picked grapes arriving at the winery in the morning are 50-60°F and given 80-100 ppm SO_2 at the crusher. Afternoon picked grapes are left in the vineyard overnight to cool down and delivered to the winery the next morning. After 4-6 hours skin contact, grapes are put through a dejuicer prior to pressing, which yields about 135 gallons/ton free run juice. A pectic enzyme is added to maximize the yield from the tough skin grapes.

Rains after Labor Day help botrytis in some sections of the vineyard more susceptible than others. Grapes, heavy with botrytis, are left to hang and sampled every couple of days. Grapes for late harvest wines may be picked over four weeks, fermented in small lots and blended. In some years, due to weather, there will be dry and late harvest lots, sometimes one or the other.

Free run and press juice are kept separate, settled 24 hours and chilled to 40-45°F before inoculation with Champagne yeast. Press juice is used in the production of a proprietary wine. Juice settlings are filtered and returned for fermentation, which is allowed to peak at 55°F and then maintained between 48-50°F.

Yeast absorbs most of the pinking and settles out. I tried to reduce severe pinking in 1981 with PVPP which stripped the wine of color, but stripped out some character as well. I would rather have some pink color, than to lose character.

Wine is racked off the lees, SO_2 level adjusted to 25-30 ppm, and a bentonite addition of 6-10 lbs/1,000 gallons is made before Christmas. We soak up bentonite in a couple of buckets of wine 24 hours before putting it in the dosing tank, and stream feed the bentonite while pumping over a tank of wine. I find bentonite settles faster, more cleanly; we use more bentonite, but have less lees loss.

Wine is held in the cellar at 40°F for tartrate precipitation. A medium DE filtration is followed by a polish DE filtration and the wine is sterile filtered ahead of the filler. The wine is bottled with 30-35 ppm free SO_2, depending on pH. I have found that using a large surface area with a low flow rate on late harvest wines achieves a satisfactory filtration with maximum throughput.

The wine goes through a bottle sickness between 6-12 months after bottling, and the dry lots have no flavor. Late harvest lots are held for almost one year before release. They are drinkable two years after bottling and hold up well for a couple of years. A slight amount of bitterness is desirable, which is moderated with a couple of years bottle age and a high acid makes the bitterness less apparent.

I like to make a *Die sonne* lot in addition to or in place of the regular late harvest lot. About 50 cases were made in '76, '77, and '78. This process involves laying clusters on trays for bees to pick-up the botrytis and spread it all over the clusters. Heavy morning dews are taken off by light breezes which help the botrytis development.

MONTEREY VINEYARD

PW: Describe the style and marketing approach:

Dr. Richard Peterson: There is no such thing as a marketing approach. Virtually everything we do in Monterey County is an experiment, because we're still trying to find out what grapes are best and how to handle them.

No two vintages will be the same. We search around, going from one vineyard to the next, trying to make the best style of wine we can in a given year, and let the market take care of itself. We don't make very much; the current '82 release is only 2,987 cases. In '81, we bottled 3,911 cases.

The style is slightly sweet and meant to be drunk young. I've never thought of Gewürz as having much ageing potential; the wines don't go bad in a year or two, but the Gewürz character suddenly diminishes.

PW: Describe the vineyards:

DRP: The Monterey Vineyard buys all of its grapes. Gewürz primarily comes from the Paraiso Springs Vineyard close to Soledad, with a little bit from some vineyards in Gonzales,

two miles apart. Soil is light and sandy. Climate in Soledad is one of the coolest in California and Gonzales is slightly colder yet.

I really believe that Gewürz is a cold climate grape, and I think that if it differs from another Gewürz in another region, I have to believe the major factor is the climate, not the handling of the grapes.

Vineyards are cordon pruned, using two bud spurs along the cordon and yield about 2-2.5 tons/acre. They are irrigated with a sprinkler system. Budbreak happens late February to early March and harvest is in October (October 8 in 1982). I imagine this is the longest growing season for Gewürz in California.

PW: When are the grapes picked?
DRP: I like to pick around 20° Brix. In 1982, the pH was 3.3 and TA 1.00. The '82 was bottled with a pH of 3.01 and TA of 0.72. The pH goes down when you make wine because potassium bitartrate crystalizes out (when you remove potassium, the net effect is to lower the pH).

Normally, tartaric acid is added to raise the acid before fermentation to 0.9; none was needed in 1982. We like the crispness and thinness that we get from picking at a little lower sugar. The result is lower alcohol; the alcohol in the '82 is 10.1%. Some people may consider that a negative; I find it more Germanic, more drinkable.

PW: How is the wine made?
DRP: No skin contact is allowed. 50 ppm SO_2 is added at the crusher. Only free run juice is used in the Gewürz. Gewürz has a lot of flavor, it can be overwhelming. I try to make Gewürz a little bit lighter. Press juice is definitely bitter, and that's the reason I really don't want to use it.

To this day, I don't understand why the Gewürztraminers in Alsace do not seem to be bitter and the Gewürztraminers in California almost always do. We almost always sweeten them in California, and that's the main reason. Press wine usually has a higher pH than free run, and that implies that it might be slightly more bitter.

But, I suspect that a lot of the bitterness comes from the cap stems, and getting the juice off those stems may be as important as getting it off the skins.

Juice is centrifuged to 1% solids prior to fermentation. Champagne yeast is used in a controlled fermentation between 48- 50°F over an average of 23 days. In 1982, the wine was chilled to arrest fermentation at 2% residual sugar. In the past, it was fermented dry and Gewürz juice added back to achieve a similar residual sugar.

After fermentation, the wine is centrifuged and the free SO_2 adjusted to 30 ppm if necessary. About 6 lbs/1,000 gallons of bentonite is used to achieve heat stability and the wine is cold stabilized. The wine is given a rough and polished DE filtration.

I blend Grey Riesling into Gewürz, because the Gewürz character is too intense from the upper Salinas Valley. The '81 bottling had 22% Grey Riesling and 3% Gewürztraminer juice. The '82 bottling has 5% Grey Riesling.

I can't honestly defend just 5%, because I doubt that 5% makes much difference, but in '82 the Gewürz character was not as strong as in previous years and I was afraid to put in as much as 20%. I like the thinness of Grey Riesling. It's low in alcohol, and has a nice balance.

The wine is filtered through a 0.45 *u* membrane at bottling. The '82 vintage was bottled January 24, and put on the market in March.

The Monterey Vineyard
VINTAGE 1982
MONTEREY COUNTY
Gewürztraminer
PRODUCED AND BOTTLED BY THE MONTEREY VINEYARD • B W 4674
GONZALES, MONTEREY COUNTY, CA, USA • ALCOHOL 11° BY VOL

Dr. Richard Peterson

LOUIS M. MARTINI

PW: Describe the style and marketing approach:
Michael Martini: Our Gewürztraminer is made in a dry style to be a complex ageing wine. I like a lychee nut character, primarily in the nose and a floral, Muscat character.

Bottle development is important. A slight bouquet which accents the wine develops in the first year. A second year of bottle age develops muskiness with a piney character. After 4-5 years, there is a predominant muskiness which blends in such that the fruit is in equal proportion after an additional 2-3 years. This plateaus for another 2-5 years. The wines must have the proper pH for bottle ageing: 3.3-3.4 or less. The balance of the '74 we tasted showed well.

Our unique style works with more foods than Chardonnay. Foods include seafood dishes, chicken dishes, salads with a variety of flavors, ham with mustard sauce; in addition to being an aperitif wine.

PW: Describe the vineyards:
MM: In 1943, a two acre clonal test plot of Gewürztraminer vines from U.C. Davis was planted in our Monte Rosso vineyard near Agua Caliente in Sonoma County at 900-1200 feet elevation.

My father walked the vineyard in 1952, tasting the grapes to pick the spiciest wood which was chip-budded to five acres of rootstock in our La Loma Vineyard in the Carneros region. In 1962, wood from La Loma was used to chip-bud 23 acres in our Los Vinedos Del Rio vineyard on the Russian River six miles south of Healdsburg.

Monte Rosso has iron rich, highly porous, well drained, weathered, crumbled rock of reddish color. Climate is classified as low Region II, and virtually frost free. La Loma has poor, shallow clay-loam soil with heavy clay three feet below the surface in a region I growing area. Los Vinedos Del Rio has soils ranging from heavy silt to gravelly soils, well drained in a medium-high region I growing area.

Vines are cane pruned in all three vineyards. Bud break occurs about the same time in each area. Dry farmed Monte Rosso and La Loma are hand picked and produce about 2 tons/acre. Los Vinedos has sprinkler irrigation and delivers 3 1/2 tons/acre. Los Vinedos is 90% machine harvested.

PW: When are the grapes picked?
MM: Sugar is the first, but not always the best indicator. We pick each vineyard at its optimum so that all grapes in the winery are very similar. The color is usually off-pink.

At Los Vinedos, 22.5° is the top limit, 22° gives you a green muscat quality, 23.0° is very spicy, but you lose some floral quality. Los Vinedos is usually picked in mid-late September over two days when the grapes reach 22.2° and are 22.7° when we finish.

Picking is very critical because Gewürztraminer respires acid rapidly: when grapes go from 22.5° to 23.0°, the acid can drop from 0.75 to 0.65 and the pH jump from 3.3 to 3.6.

Monte Rosso is picked around Labor Day, and can get riper while maintaining delicateness. Each clone ripens to different colors, ranging from deep pinks to almost white. We pick between 23.0- 23.5°, 0.75-0.8 acid, and 3.2-3.3 pH. La Loma is picked between October 1-15, when the grapes reach 22.0° with 0.65-0.7 acid and a pH of 3.2-3.3.

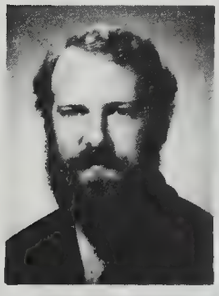
PW: How is the wine made?
MM: Acid addition, if necessary, is done before fermentation to properly marry the acid into the wine. In 1980, tartaric acid was added to raise 0.60 acids to 0.75 prior to fermentation.

An average of 60 ppm SO_2 has been added to grapes at the crusher. Cool morning loads of grapes received by midday are pressed off immediately. Afternoon loads with grapes at about 70-75°F received at the end of the day are given skin contact overnight and pressed early the next morning in the Willmes bladder press.

I believe Gewürztraminer should have a slight residual bitterness. Bitterness comes from the flavonoid phenolics in the grape skins and is therefore a function of ripeness, of heat zone (which affects breakdown of the skins), condition of harvest, and the growing season.

In 1977, 1980, and 1982 we did experiments at crush. We oxidized the free run juice by running it through a heat exchanger to cool the juice to 32°F and then settled the juice to drop out the brown color and bitterness, followed by racking and inoculation. In '82, there was no SO_2 addition until after fermentation. This year, if we have good condition grapes, we will add no SO_2 at crush.

Michael Martini



Only free run juice is used. Juice of higher Brix is cold settled at 32°F for a couple of days, racked and inoculated with Champagne yeast. Cleaner juice is inoculated immediately without settling. After inoculation, the juice temperature is adjusted to 45°F in the stainless steel tanks and fermented to dryness.

After settling 2-5 days, the wine is racked off the lees to redwood tanks and settled for two weeks to dissipate the CO_2 and drop solids. Wine is racked and SO_2 adjusted to 30 ppm free. 2 lbs of bentonite/1,000 gallons is added to help drop out the yeast during a two week settling.

We added a pressure leaf filter in 1982 which has reduced the SO_2 loss during filtration. Gewürztraminer is given a coarse DE filtration and returned to redwood tanks for four-six months to oxidize slightly, eliminate CO_2 and round out.

After blending, the wine is often clarified with isinglas to make the wine more delicate in the mouth, or PVPP to reduce heavy bitterness from riper grapes. The clarifying agent is chased with an average of 3 lbs/1,000 gallons of bentonite. The wine is cold stabilized for two weeks at 26-27°F and followed by a medium DE filtration. A polish pad filtration and 0.45 *u* membrane precede the filler and the wine is bottled with 30 ppm free SO_2.

NAVARRO VINEYARDS

PW: Describe the style and marketing approach:
John Montero: (Co-winemaker) Three lots of Gewürztraminer are bottled here at Navarro, near Philo in the Anderson Valley of Mendocino County, CA. They are: dry, Edelzwicker, and late harvest; Edelzwicker is an Alsatian word for noble blend, a house wine in Alsatian restaurants.

The major emphasis each year is to produce the best dry-style Gewürztraminer possible. One vineyard site is reserved for the production of late-harvest Gewürztraminer, usually representing about 20% of the production.

The ratio of Edelzwicker production to dry Gewürztraminer is dependent on the quality of the grapes each vintage. In the best years, more dry-style is made. In other years, more of the dry Gewürztraminer is de-classified and blended with a fruitier White Riesling to produce Edelzwicker.

Deborah Cahn, co-owner, likes to match-up the dry Gewürztraminer with spicy Hunan cooking, Indian curries, and traditional Alsatian pork dishes. Cahn likes the late-harvest style with apricot marzipan torte.
PW: Describe the vineyards:
JM: Planting of Gewürztraminer took place in 1975-1977. Anderson Valley is a coastal valley rated mid-region I and has a long cool growing season with morning and evening fog during the summer and very few days in the 90's. The vineyard with thin clay based soil is planted at 600 feet elevation.

Bud break occurs about mid-March, and grapes for the drier lots are picked in mid to late September with the late harvest being picked an average of three weeks later in October. The irrigated vineyard is cane pruned to yield three tons/acre. Vines are undercropped to encourage vegetative growth: maximum leaf surface to maximize early ripening.
PW: When are the grapes picked?
JM: Harvest criteria includes tasting the juice when the entire cluster turns a russet red color. Grapes for the dry lots are picked before the acid drops under 0.6, with an average of 23° Brix between a low of 22.8° and a high of 23.5° and 0.65-0.75 acid. pH varies with the growing season between 3.2-3.5. Some grapes for Edelzwicker may be picked at 22.5°.

Late harvest lots contained 15% botrytis in 1981 and almost 30% in 1982 and were picked at about 25.5-26° Brix with 0.6 acid, much of which is tartaric that drops out during wine processing.

Indian summer with 80-90°F days often occurs during harvest. Grapes are picked in the cool morning and crushed, or lug boxes of warm afternoon grapes are stacked on the crush pad to cool overnight before crushing the next morning. Fruit temperature is in the low 60's; high 40's and 50's are not uncommon.

PW: How is the wine made?

JM: 50-75 ppm SO_2 is given to crushed grapes to stunt wild yeast. Grapes for the dryer lots receive 48 hours skin contact while late harvest grapes only receive overnight skin contact. Gewürztraminer grapes are turgid, skin contact helps release the juice and flavor components. During skin contact, warm grapes are pumped over once a day to control the juice temperature.

After pressing, the juice is settled for two days, racked off and the juice temperature is in the 40's when inoculated. Fermentation temperature of dry lots is kept at about 50°F to maintain a drop of 1/2° Brix drop per day during average two- month fermentations.

Prior to inoculation, dry lots receive tartaric acid additions to reach 0.75 which will be around 0.65 in the finished wine. The acid in late harvest lots is increased to 0.8 prior to inoculation.

Two yeasts are used on dry lots to add complexity to the wines. Epernay yeast is used on some lots to accentuate the floral, spicy, citrusy character, while Steinberg yeast is used to accentuate the Riesling, muscat character on other lots. Epernay inoculated lots ferment completely dry in 6-8 weeks,

GEWÜRZTRAMINER WINEMAKING SUMMARY

WINERY	CLIMATE OF VINEYARDS	HARVEST CRITERIA	SKIN CONTACT	YEAST	FERMENTATION TEMPERATURE	USE OF OAK	FILTRATION
Amity Vineyards Myron Redford	2100-2400 heat units/yr.	21-22.0° Brix 0.7-0.8 TA 3.4 pH	0-48 hrs.	Champagne	50-55° F	no	medium DE, polish DE, pad filtration, 0.45 u membrane
Associated Vintners David Lake	2600-3000 heat units/yr.	20.5-21.3° Brix 0.69-0.75 TA 3.35-3.4 pH	4-8 hrs.	Champagne	50-55° F	no	rough pad and polish pad
Balverne Doug Nalle	high region II	22-23° Brix 3.3-3.5 pH	3-20 hrs.	Champagne 595	65° F	partial	polish pad, 0.45 u membrane
Evensen Vineyards Dick Evensen	Oakville, Napa Valley, CA	21-22° Brix 0.6-0.65 TA 3.4 pH	12-14 hrs.	Steinberg	50° F	no	coarse pad, sterile pad, membrane
Felton-Empire Leo McCloskey	Region II	20.5° Brix 3.1-3.18 pH	8-16 hrs.	Steinberg	41-47° F	partial	centrifuge, 0.65 u membrane
Gundlach Bundschu Lance Cutler	cool Region II	21.5° Brix 0.8-0.9 TA 3.0 pH	6 hrs.	Champagne	50° F	no	centrifuge, tight DE, 0.45 u membrane
Grand Cru Vineyards Bob Magnani	low Region II	23.0-24.0° Brix 0.55-0.6 TA 3.5 pH	15 hrs.	Champagne	50-55° F	no	rough pad, sterile pad, 0.65 u membrane
Hacienda Wine Cellars Steve MacRostie	high Region II	22-22.5° Brix 0.7-0.9 TA 3.3-3.5 pH	9-15 hrs.	Champagne	45-50° F	no	coarse DE, polish pad, 0.65 u membrane
Hinzerling Vineyards Mike Wallace	2400 heat units/yr.	22.0° Brix 0.65-0.75 TA 3.2-3.3 pH	4-6 hrs.	Champagne	48-55° F	no	medium DE, polish DE, sterile filter
Monterey Vineyard Dr. Richard Peterson	1700-2100 heat units/yr.	20° Brix 0.9-1.0 TA 3.3 pH	none	Champagne	48-50° F	no	rough DE, polish DE, 0.45 u membrane
Louis M. Martini Michael Martini	region I - low region II	22.0-23.5° Brix 0.65-0.8 TA 3.2-3.3 pH	O-overnight	Champagne	45° F	no	coarse DE, polish DE, polish pad, 0.45 u membrane
Navarro Vineyards John Montero	mid region I	22.8-23.5° Brix 0.65-0.75 TA 3.2-3.5 pH	12-48 hrs.	Epernay Steinberg	45-50° F	partial	polish pad, sterile pad
Joseph Phelps Walter Schug	low-mid region II	21.5-22° Brix 0.55-0.65 TA 3.2-3.4 pH	3-5 hrs.	Steinberg	55° F	partial	coarse DE, coarse pad, sterile pad, or tight pad
Chateau St. Jean Dick Arrowood	mid-high region I	21.-23.9° Brix 0.71-0.82 TA 3.2-3.5 pH	6-10 hrs.	Champagne	47-60° F	no	rough DE pad, polish pad, 0.65 u membrane

while Steinberg inoculated lots are stopped at 1 1/2-2° residual sugar (-0.5 to 0.0° Brix).

An experimental dry lot in '82 received Chanson yeast to increase the floral character and minimize the muscat character. Steinberg yeast was used in '80 on late harvest lots. In '81 and '82, Beerenauslese yeast was used to maximize esters, intensify the apricot character of botrytis, and extract the pineapple character. Fermentation temperature is kept about 45°F, under 1/2° Brix drop/day and fermentation is stopped to leave 5-7° residual sugar.

John Montero

Lots fermented dry, are chilled to about 40°F to help drop out gross yeast lees over 1-2 days, racked and given a 60 ppm SO_2 addition when put into barrels or 650 gallon German oak ovals for about 60 days of oak contact. The wine is topped every two weeks and SO_2 level maintained at 30 ppm free.

The interaction between tannins and yeast help clarify the dirty wine, reducing the amount of bentonite needed for heat stability and filtration and reduces the bitter character from skin contact. Wood aged lots require 2 1/2-4 lbs/1,000 gallons bentonite.

Lots fermented with Steinberg yeast remain in stainless steel and are racked, chilled, racked, and receive about 5 lbs/1,000 gallons bentonite for heat stability, and is chased with gelatin and Kieselsol to help clarification. Late harvest lots require a little more gelatin and Kieselsol to aid clarification and the gelatin helps to reduce bitterness according to Montero. The wines are cold stabilized between 25-30°F for 2-3 weeks.

The dry blend has a heavy proportion of Epernay fermented wine while Edelzwicker has a larger amount of Steinberg fermented wine. Wines receive a tight polish pad filtration, a yeast proof polish filtration, and a sterile pad filtration.

The dryer lots are very harsh at bottling and all lots are held 6-8 months before release to smooth out the edges and bring out the fruit. More botrytis esters appear during bottle ageing. Two years past crush, the wines begin to pick up an oxidized bottle character and show real well.

JOSEPH PHELPS VINEYARDS

PW: Describe the style and marketing approach:
Walter Schug: Grapes guide the making of Gewürztraminer. It is notoriously low in acid, that is the first thing to protect. High pH and low acid can make a soapy wine.

Beginning with the 1982 vintage, we were able to blend Napa up-valley grapes with down-valley grapes and north slope mountain grapes to deliver the delicate lightness we have been striving for. We want to make it as dry as possible but taste right—balanced. A slight touch of residual sugar lifts out the varietal character and also helps to slightly veil the traditional and necessary bitterness. The residual sugar level has been gradually lowered in the last five years from 1.2 down to 0.7.

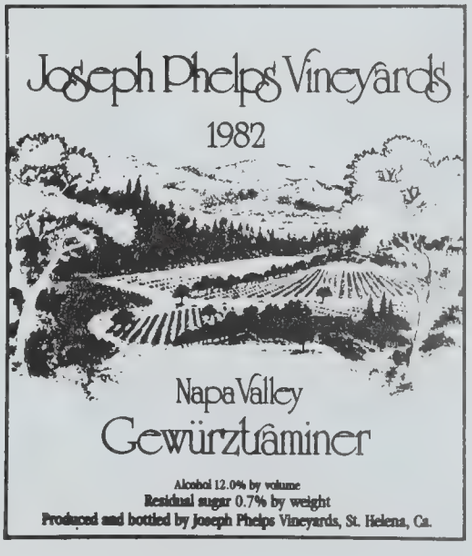
The wine is generally viewed as a luncheon wine. It goes nicely with flavorful and spicy foods: chicken, curry and rice, mussel dishes, as well as ham, quiches, etc. Bruce Neyers, responsible for Phelps marketing, reports the Gewürztraminer is widely accepted by restaurants with diverse cuisines and 50-60% of Phelps 6,000 case annual production is sold through restaurants.

Our fruity style of Gewürztraminer is drinkable relatively early, say five months after production. The dry style needs much longer to overcome initial bitterness and awkwardness, but as a style should last longer. Both styles show well after one year of bottle age and much longer if more people would bother to lay them down. Our 1975 is delicious right now, I wish I had more of it!

PW: Describe the vineyards:
WS: Up-valley grapes are grown at the foot of the Phelps ranch in river loam soil at 200 foot elevation, rated mid-region 2. The hand picked yield fluctuates between 3-5 1/2 tons/acre from cane pruned vines planted on 8 X 12 spacing.

Mountain grapes come from vines planted at 440 foot elevation in slightly reddish clay mixed with aiken loam. The northern slope on the Phelps ranch is rated low region II and the yield is five tons/acre from cordon-pruned vines planted on 5 X 11 spacing. Down-valley grapes come from the machine picked Trefethen Vineyard.

Walter Schug



PW: When are the grapes picked?
WS: Gewürztraminer is difficult to pick by refractometer. Visual and taste observation, and seat-of-pants instinct is better. Mountain grapes with the highest acids and best fruit

flavors are picked first with a 3.2 pH. One to two weeks later, the lower estate vineyard, rich in fruit flavors, is picked at 21.5-22.0° Brix for body, 0.55-0.65 acid and 3.4 pH. Usually two weeks later, Trefethen Vineyard is picked at about 21.5° Brix, 0.65 acid, and 3.3 pH.

PW: How is the wine made?

WS: 50 ppm SO_2 or less is added at crush. Skin contact is given only to grapes received under 60° F in the roto tanks, juice drainer, or tank press for 3-5 hours. Acid adjustments are made with tartaric acid to raise acid levels to 0.85.

Bitterness comes from a characteristic phenolic compound in the grapes. Grapes grown in cooler areas will produce less of the characteristic. To minimize bitterness, we do not stress the vine too much, only skin contact and press cold grapes and eliminate solids as fast as possible.

Press juice and free run are centrifuged together to achieve a solids level of 1.75%. Steinberg yeast is used in 55° F fermentation which takes about 20 days to reach dryness. One lot is stopped at about 6° Brix by chilling, addition of bentonite (by analysis: 5-11 pounds/1,000 gal), and filtration. Filtration includes a coarse DE filtration in a plate/frame or lees filter, followed by a coarse pad and sterile pad filtration. This lot remains in stainless steel until bottling.

Dry lots receive bentonite and a tight pad filtration after fermentation and are then put into neutral 800-1500 gallon German oak ovals. The German oak ovals are large enough to enhance the complexity without destroying fruit flavors.

Cold stabilization has been done since the 1981 vintage by seeding 30° F wine with tartrate crystals which are rolled over by a mixer to insure dispersion throughout the tank. Settling is completed in 2-3 days. The wine is blended and bottled with 35 ppm free SO_2 in February.

CHATEAU ST. JEAN

PW: Describe the style and marketing approach:

Richard Arrowood: Gewürztraminer accounts for about 15% of our total production. It's market share in California is a bit thin, compared with other varietals, so we're not expanding our production of Gewürztraminer. There is a lot of good Gewürz in the market place, but there does not appear to be the ability to sell a $9.00, $10.00, or $11.00 bottle of California Gewürz.

We're still searching for what the real style should be for us and for California. In years when we've made dry styles, people said there wasn't enough residual sugar; when we made sweet ones, people said, 'I wish you had those dry ones again, because they develop so well.' My guess is that for the 1983 vintage, I'm going to be trying for a drier version again, something between 0.3 and 0.6 residual sugar.

I believe that longevity in wines like this seems to be more proportional to the amount of alcohol than it does to the amount of sugar. If anything, leaving 1-2% of residual sugar in these wines seems to lessen their potential for development. We'd like them to be able to age at least two or three years. So far, the results of long term ageing of Gewürz have been somewhat disappointing for us.

PW: Describe the vineyards:

RA: Our approach to Gewürztraminer will be primarily from two Sonoma County vineyards: our estate vineyard in Sonoma Valley, and the Frank Johnson Vineyard in the Dry Creek Valley. We will be producing less and less from Alexander Valley grapes, which I think may be a little warm for drier style Gewürztraminers, producing a little less spicey intensity.

Dick Arrowood

1982
Chateau St. Jean
SONOMA COUNTY
Gewürztraminer
FRANK JOHNSON VINEYARDS
PRODUCED AND BOTTLED BY
CHATEAU ST. JEAN • KENWOOD SONOMA VALLEY CALIFORNIA USA
BONDED WINERY NO. 4710 • ALCOHOL 10.7% BY VOLUME

Frank Johnson's vineyard is located in a cool pocket of Dry Creek Valley that consistently gives us the kind of fruit we are looking for. Our estate vineyard retains acidity quite well. I think in the case of Gewürz, soil is important, but not as important as the climate for growing and ripening of Gewürz. It is such a sensitive variety, if you have too warm a growing condition, you end up with virtually no acid at all, very high pH and a rather inadequate wine.

Low drainage soils are not useful to any variety. Here at the winery, we have Arbuckle Sandy Loam, combined with a red iron oxide type soil, which drains well. But again, soil does not seem to be as much of a key element in Gewürz, as it is in Sauvignon Blanc or Chardonnay. The estate vineyard is rated mid-high Region I. Mid-Region I is ideal; Gewürz needs warm weather for ripening, but very cool evenings.

My feeling is that Gewürz should be at its best in areas like Anderson Valley in Mendocino County; it's very, very cool, with a nice elongated season.

With 67.8 inches of rain in 1983, I don't think we are going to need any irrigation this year! We generally don't irrigate except in a drought situation. We use overhead sprinklers for frost protection here and Frank Johnson has drip irrigation.

Both vineyards are cane pruned. In our own vineyard, we average two canes per vine, some have three, some one. Our vines were planted in 1974 and we average 3-3.25 tons/acre. We're getting very low yield from the hillside block. Frank Johnson averages 4 to 4.5 tons/acre.

PW: When are the grapes picked?

RA: Bud break usually occurs sometime between February 15th-25th, flowering from the middle of May to the beginning of June. Harvest usually occurs the last of August or the beginning of September. I used to pick by sugar, acid and pH. Now, I pick basically on color; if it hasn't turned color, it's not going to give the character I'm looking for.

I want that color, even if it's overly ripe, I'd rather make a wine with a little residual sugar or a little higher alcohol and get Gewürz character, than to pick early and not get a thimble- full of the character we like.

At veraison, sugar can be anywhere between 21°-24° Brix, depending on the year. In 1982, pH's from the different vineyards were 3.2-3.5, and acids were 0.71-0.82. '82 sugars ranged from 21° to 23.9° Brix.

PW: How is the wine made?

RA: Grapes are crushed under a blanket of CO_2 gas into a dejuicing tank and receive 50-75 ppm SO_2 at the crusher. Skin contact lasts 6-10 hours with the refrigeration jackets lowering the must temperature to around 40°F. Free run only, is used in Gewürztraminer (press juice goes into Vin Blanc, a dry white table wine).

Enzyme is added at the crusher to improve clarity of the juice and pressability of the skins. Juice is settled 1-2 days prior to centrifuging. During settling at 35-40°F, you will start to precipitate out the potassium ions coupled with tartrate and bi-tartrate ions, thereby reducing acidity even further. We may add acid back to compensate for any acid reduction during the cooling process.

If an acid addition is necessary, malic acid or a combination of malic and tartaric is used. Juice with 5-8% solids is centrifuged down to between 2-4% insoluble solids. Champagne yeast is used in a 3-4 week fermentation. Fermentation has been conducted at 47°F and as high as 60°F, and a little higher temperature may be tried in 1983. We control the fermentation temperature between 47°F- 55°F until 4-5° Brix is reached, turn off the cooling jackets and the temperature rises several degrees.

Gewürz is classified as a white variety, but it's really a pink or red variety. The skins are quite red, and you can pick up a lot of color and tannins if you leave the juice on the skins too long. These tannins add to bitterness.

California has developed Gewürztraminers with a little residual sugar to cover up that bitterness. We've also had good success getting rid of the bitterness by fermenting a little warmer.

I just spent some time in Alsace, where they like to ferment Gewürz as high as 68°F, which is very warm; that tends to alleviate much of the bitterness, yet even at that high a temperature, they don't seem to lose the grapey freshness, the varietal definition, which is surprising. I had a chance to taste some of their cooler fermented Gewürz versus some of their warmer fermented Gewürz, and frankly I preferred the warmer fermented Gewürz!

When the wine has fermented to the desired sugar level, fermentation is stopped by chilling and centrifugation. If a dry style, when the fermentation subsides, the wine is centrifuged and settled for clarification, never seeing any wood. During clarification, the SO_2 is raised to 100 ppm. These are generalizations, because the amount of SO_2 you need to hold stability depends on what the free SO_2 is and what the pH is.

I'd like to end up with 20 ppm free SO_2 prior to bottling, and raise that up to 30 ppm at bottling. Rarely, do any of our wines, with the exception of late harvest, exceed 150 ppm total SO_2; most are in the area of 100 to 125 ppm. An average of 3-4 pounds/1,000 gallons of bentonite is used to achieve heat stability.

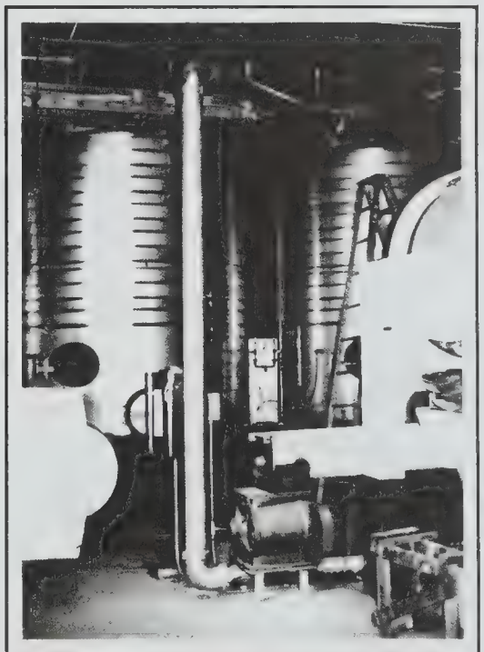
A rough DE-pad filtration is followed by a polish pad filtration. Wines with residual sugar go through a 0.65 u membrane filter ahead of the filler. Bottling occurs between November 15-December 1 and the wines are released in April.

TEMCO

PNEUMATIC SYSTEMS

AIR CONVEYING
•POMACE
•STEMS
•DIATOMACEOUS EARTH
•WHOLE GRAPES

SYSTEMS NOW IN OPERATION IN CALIFORNIA



TEMCO POMACE SYSTEM

TEMCO, INC.

P. O. BOX 6039
BELLEVUE, WASHINGTON 98007
Telephone: (206) 747-1550
TWX: 910-443-2489

Circle No. 146 on Reader Service Card

TASTING NOTES

Michael Martini, Louis M. Martini Winery, Napa
Stephen R. Dooley, Louis M. Martini Winery, Napa
Leo McCloskey, Felton-Empire, Santa Cruz
Brooks Painter, Felton-Empire, Santa Cruz
Douglas B. Nalle, Balverne, Sonoma
Steve MacRostie, Hacienda Wine Cellars, Sonoma
Bob Magnani, Grand Cru Vineyards, Sonoma
John Montero, Navarro Vineyards, Mendocino
Scott Clemens, Wine writer
Don Neel, Editor
Gerald Weisl, Weimax Wine and Spirits, Burlingame

DRY STYLE

1980 Amity Vineyard, Willamette Valley, Oregon, 13% alcohol

Magnani: Neutral nose, no Gewürz character, washed out.
Martini: The free SO_2 was too high at bottling. Yeasty mouth, short finish.
Weisl: It strikes me as soapy, perfumey.
Nalle: It has an autolysed yeast character.
Color: pale straw
Aroma: vinous, yeasty, piney, soapy, high SO_2, musty
Flavors: dry, oxidized character, slight wood character, slightly bitter, yeasty, austere, piney
Balance/Finish: medium body, good acid, short hot finish

1981 Amity, Willamette Valley, Oregon, 12.4% alcohol

Magnani: This is gone, oxidized.
Nalle: Just add some SO_2, and that won't happen.
Martini: Oh no, you could sell this in the market.
Color: copper
Aroma: light orange blossom, sweet-pea, apples with an apricot note, turpentine overtones
Flavors: oxidized apple juice
Balance/Finish: dry, light body, bitter finish

1982 Amity Vineyard, Willamette Valley, Oregon

MacRostie: Wow!
Magnani: This one and the next one (it turned out to be the '82 Hacienda) are very similar. They're the classic, cold-fermented Gewürz. One is a little drier than the other, but they're both beautiful wines.
Dooley: They did it right this time.
Weisl: Practice makes perfect.
Magnani: That's so different from the other two that I have to believe the other two are winemaking mistakes.
McCloskey: Or age, that's the other variable.
Magnani: I can't believe they'd deteriorate that far, that fast. Those have got to be winemaking mistakes. This has to be more indicative of what the fruit is capable of doing.
Color: beige, with a slight pink blush
Aroma: floral, candy-like, muscat, banana.
Flavors: classic youthful Gewürz, grapefruit, peach, banana, fine spice, Napa-like Gewürz character, some bitterness
Balance/Finish: dry, crisp, light body, clean finish

1980 Associated Vintners, Washington, 12% alcohol

Before the unveiling:
Painter: It seems a bit thin and watery, and something is off in the nose.
Magnani: It has a burnt wood characteristic in the nose—no Gewürz character at all.
Nalle: I think it's a good M-L character.
McCloskey: It has an Alsatian quality, from the way they treat Riesling varieties with barrel ageing and all that.
Nalle: As far as complexity is concerned, this is one of the better wines. We have wine here, not just fruit juice.
Martini: I think the nose is washed out. It might be pretty good with food.
After the unveiling:
Magnani: Did they use wood?
McCloskey: Do you guys see wood as a flaw?
Magnani: I think you have to be very careful with it, and I wouldn't put any of ours in wood, other than a great big redwood tank.
Color: very light straw
Aroma: light muscatty fruit, canned corn, wood
Flavors: spicy, slightly sweet, some burnt wood character, slight bitterness, m-l character
Balance/Finish: long, tart, lemony finish with a strange off-taste
Comments: Something off in the nose, provocative, intriguing, a 'close miss'

1981 Associated Vintners, Eastern Washington, Dry, 12.1% alcohol

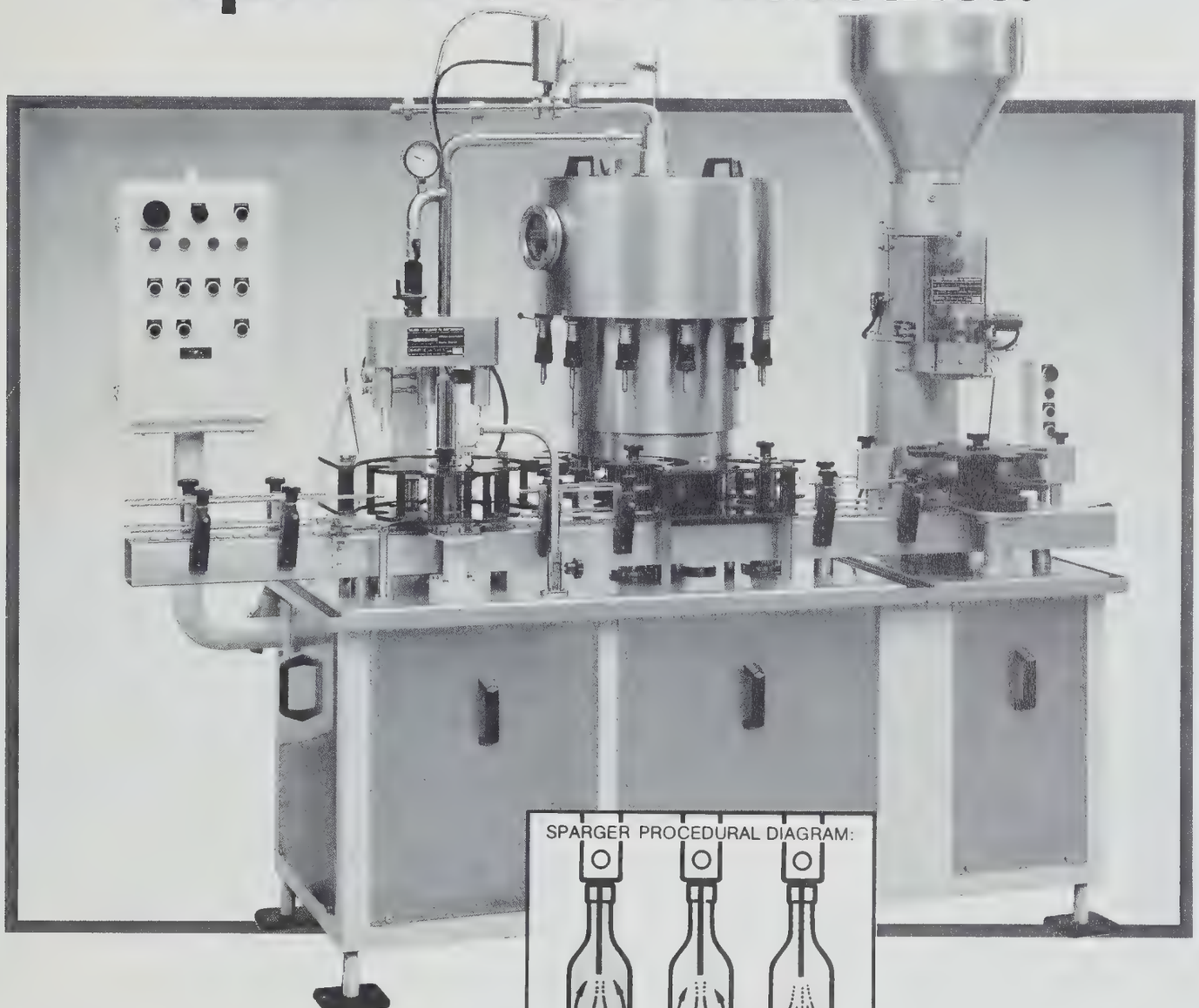
Martini: I think this has a delicate nose, and a long - even spicy - finish.
Painter: It seems to have spent some time in wood.
Magnani: It seems to have wood and a slight grassy character from underripe grapes. For me, this doesn't have the typical pungency of Gewürz. I think that both the wood and the grassiness detract from it.
After the unveiling:
Martini: Boy, that rings now; you smell that and think Washington whites.
Color: pale straw
Aroma: muscat and spice, grassy, baloney, peanuts
Flavors: dry, banana, light varietal spice, fresh
Balance/Finish: light body, thin, a bit flat, long spicy finish

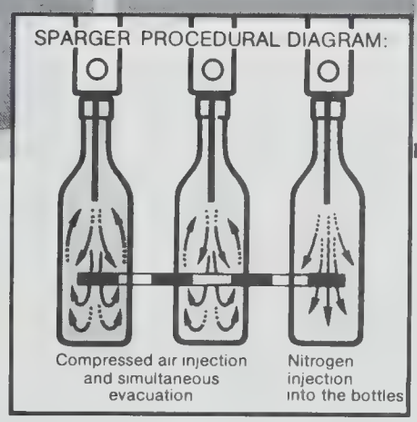
1981 Balverne, Pepperwood Vineyard, Sonoma County, Dry, 12.9% alcohol

Before the unveiling:
Martini: Nicely balanced, but it's nothing to get excited about.
MacRostie: It's a character we've run into a lot today. I didn't like it at first, but I guess it's really acceptable. It's an awkward phase that a lot of these wines seem to be going through, that piney-like nose that I don't care for. This is new to me, but I think Mike's right, that some of these wines go through weird phases and you have to ride them through, and after that they're first.
Painter: I think it's burned-out and alcoholic, like it won't go anywhere.
After the unveiling:
Nalle: About 25% went through malo-lactic, not noticeable.
Dooley: I think it's very complex, but I can't identify it as a particular aroma. I picked up oak.
Magnani: Do you think that's contradictory to what Gewürz should be?
Nalle: If it is, we're going to have to start selling the grapes because we won't be able to sell the wine. If we're right, then we've found a niche. Ours is a definite emerging style that goes flat up against what everyone's been doing for ten years.
Montero: Are you leaving it in wood?
Nalle: '81 spent 4-5 months in 2,000 gallon French oak uprights.
Montero: That's what it felt like. It has oak texture, but not oak flavor.
Nalle: And I think now I want to look for that smokey, small barrel character, and a little more malo-lactic.

RONCHI

Bottling equipment for wine, liquors and food industries.




SPARGER PROCEDURAL DIAGRAM:
Compressed air injection and simultaneous evacuation
Nitrogen injection into the bottles

Manufacturing program:

- Sparging machines for bottle cleaning and injection of nitrogen into the bottles
- Fillers from 12 to 60 spouts
- Complete bottling lines
- Capping machines

SALES ORGANIZATION - TECHNICAL ASSISTANCE

RONCHI INC. USA

1107 Lunt Ave. Unit N° 5 - Schaumburg IL 60193 - Tel. (312) 351-2366 - Telex 9106930870 U.S.A.

Circle No. 143 on Reader Service Card

MARK YOUR CALENDAR NOW FOR
WINETECH 1984
THE EXPOSITION FOR YOU

International Wine Technology Exposition and Conference

Los Angeles Convention Center • Los Angeles, California U.S.A.

April 2-4, 1984

WINETECH
U.S.A.

WINETECH HAS BEEN ENDORSED BY INTERVITIS, THE MOST PRESTIGIOUS OF EUROPEAN WINE TECHNOLOGY EXPOSITIONS.

WINETECH has been designed as a professional undertaking in recognition of the fact that the wine technology industry is in the process of evolution.

WINETECH will be a showplace for the manufacturer to position his product in a complex and competitive international marketplace.

WINETECH will open markets for you in Australia, Canada, Mexico, New Zealand, South Africa, South America, the Orient, and the United States.

WINETECH will bring together all of the latest vinification techniques and equipment as well as technological innovations utilized in the production, packaging, storage and shipment of wine.

WINETECH will offer the manufacturer a professional setting and opportunity to meet with thousands of vineyard owners, plant and general managers, oenologists and technicians who are potential buyers.

WINETECH will offer you an opportunity to show your latest array of field equipment, wine making and winery equipment, storage materials and containers, bottling and packaging equipment, associated equipment and services, laboratory devices and cellar hygiene materials.

WINETECH will feature a major oenological conference program which will present an international contingent of experts speaking on a series of subjects of value to the thousands of wine industry personnel who will attend this important industry event.

☐ YES, I would like to exhibit my products in WINETECH U.S.A. Please rush me a complete set of materials including a floorplan and space application.

☐ I would like to attend the Exposition. Please send me attendance information.

Name _____

Position _____

Company Name _____

Street Address _____

City _____ State _____ Zip _____

MAIL TO: Winetech U.S.A.℠ Cahners Exposition Group, 999 Summer Street, P.O. Box 3833, Stamford, CT. 06905 – 203/964-0000
Telex: 649400 Cahex WU STD

Circle No. 152 on Reader Service Card

Color: straw
Aroma: distinctly varietal, perfumey, piney
Flavors: crisp, delicate, good spice
Balance/Finish: barely off-dry, medium body, well-balanced, somewhat hot, citric finish

1982 Balverne, tank sample, 6% muscat, 50% M-L, 50% fermented in French oak uprights

Martini: Obviously a tank sample, but it has good spice. It shows promise.

Magnani: Yeasty, with a woody character in the background.

Montero: I couldn't pick out any varietal character.

Magnani: I think that's covered up by the yeastiness and the wood.

Nalle: This is kind of an interesting wine. At least half of it was fermented in 2,000 gallon French oak uprights with no cooling, so it started off cool, but at one point got up to 82°F.

Magnani: Why all that?

Nalle: For fun. It's so unstable now, it's different from what it was yesterday.

McCloskey: Why did you do malo-lactic? What's the tradition behind that?

Martini: A lot of Swiss and Italian Gewürztraminers go through malo-lactic.

Dooley: Some of the Alsatians do that to lower the acid.

McCloskey: That's interesting, because that can be deadly.

Nalle: We did it because we're intentionally trying to burn off varietal character; we're trying to get a meatier wine. It's a bit of a risk, but we're looking for a dry Gewürz that's a table wine, not a cocktail wine.

Painter: Are you going to barrel age?

Nalle: A third of it is in small French oak barrels, a fifth of it is in 2,000 gallon uprights.

Martini: I think it's great that somebody is trying to come up with a unique style, versus copying everybody else. We keep repeating patterns here—with about three basic styles.

Color: hazy, green-straw
Aroma: low nose, woody character, spice, yeast
Flavors: bananas, oranges, slight grapefruit, wood
Balance/Finish: medium body, slightly flat, hot finish
Comments: Maybe too young to assess, but shows promise

1980 Evenson, Napa Valley, Dry, 13% alcohol

Martini: It seems to have some residual sugar in the nose, but I don't detect any in the mouth.

Magnani: It's a little oxidized, a little older, but it's got very nice Gewürz character. It's clean, and it has a slight amount of bitterness, but it's nice Gewürz.

Martini: It smells like an '80.

Nalle: There is a little bit of grassiness that blows off.

Color: very slight amber-yellow
Aroma: perfumey muscat, smells sweet, delicate floral, toasty undertones
Flavors: quite spicy, very light oxidation
Balance/Finish: dry, good acid, slightly bitter finish

1982 Felton Empire, Talmadge Town, Mendocino County, 11% alcohol

Before the unveiling:

MacRostie: I got some oak in this wine.

Magnani: This has that young, grapefruity character, some residual sugar. I think this is going to be a great Gewürz—right on the money. Had it been a little drier, for the body it has, I think it would have been even better.

Martini: Very distinctive.

After the unveiling:

Neel: This says 'low residual sugar', what does that mean?

McCloskey: We admit to a percent.

Montero: What did you harvest at?

McCloskey: We had to push for ripeness. We got an incredible rain, it got to 19° Brix and just sat there. We waited a month to get to 1° Brix.

Magnani: Were the pH's really high and need a lot of correcting? I found the pH's very high last year in things that just sat and sat.

McCloskey: Yes, 3.7.

Color: light straw
Aroma: grapefruit and spice, orange blossom, clove oil
Flavors: clean, fresh, some residual sugar, spritzy, lots of spice
Balance/Finish: medium body, excellent balance

Photography Lloyd Liebes, Jr
Circle No. 114 on Reader Service Card

Bottles • Corks • Capsules To Protect Your Quality Wines

Now you can get consistent, high-quality bottles, corks and capsules from a single source. East or west, we're flexible, to give you dependable on-time delivery. We can respond quickly to short lead times on any of our in-stock bottles, corks and capsules. We'll emboss or treat corks to your specifications and pledge prompt delivery of the grade and design ordered.

Our capabilities of applying design concepts to tin-lead, plastic, aluminum and polylam champagne capsules are infinite—supported by a staff of the highest skilled craftsmen.

To protect your quality wines, call on Riekes Container to fill your ever-growing demand for quality bottles, corks and capsules.

Riekes Container Company

A Division of S. Riekes & Sons, Inc. Established 1898

The end of the bottle bottleneck.

- 1410—64th Street
  Emeryville, California 94608
  (415) 653-9474
  (800) 227-0747 (outside California)

- 1041 West Valley Road
  Devon, Pennsylvania 19333
  (215) 687-4459

Circle No. 142 on Reader Service Card

1979 Gundlach-Bundschu, Sonoma County, 11.5% alcohol

Before the unveiling:

Martini: I could have mistaken that for a Riesling. I guess it has three years in the bottle.

Montero: I think it has a cloying finish, sweeter than the rest.

Martini: That's an ester sweetness, which I think is from bottle development.

Magnani: It needs more acid, it's just flat.

After the unveiling:

MacRostie: It has a little of that lychee character that's typical of Gewürz.

Clemens: I often get that lychee character out of Riesling, too. This has that—and some muscat character—but it doesn't have any spice.

MacRostie: Muscat and Gewürz are often very similar in several stages of their ageing.

Clemens: Is there residual sugar on this?

Magnani: It says dry, but I don't believe it. It may be low in sugar, but very high in pH and low in acid. It gives the same effect.

Color: straw-gold

Aroma: clean muscat, nose could be mistaken for Riesling

Flavors: some residual sugar, buttery, very good varietal taste, loads of fruit, lychee nuts, slight residual sugar, some bitterness, slight oxidative aged character

Balance/Finish: medium body, not quite enough acid, nice finish

1980 Gundlach Bundschu, Rhine Farm Vineyards, Dry, 11.9% alcohol

Magnani: It has a roasted nut character.

Martini: It's a good quaffing wine, but under a generic label. I don't get any Gewürz.

McCloskey: The '82 is so nice, the '79 and '80 are faded. I'm curious about where that elegant grapefruit goes. If you go for the grapefruit, does that mean you're opting out of the ageing game? That's my big question with these Riesling varieties.

Magnani: Ours have a lot of grapefruity character when they're young. As they get older they get oxidized, but still have that spicy, Gewürz character. The best wines we've ever made had an intense grapefruit character when extremely young. If it doesn't have that grapefruit when it's in the tank, I know it won't last more than a year.

Martini: I notice that grapefruit in just about every white variety we do. I think it's a yeast component, and I think it's a fermentation ester.

MacRostie: There's a citrusy thing about all young whites, but Gewürz is different. It has more fermentation bouquet.

Color: light straw

Aroma: toasty, yeasty, cereal, apricot, almost woody aromatics, hay-like, Riesling nose

Balance/Finish: varietal character comes out in finish

1982 Gundlach-Bundschu, Sonoma Valley, Dry, 12.5% alcohol

Magnani: A typical very young Gewürz, grapefruity, a little pink. The nose is great; it should develop nicely.

MacRostie: I'd call that a very classical Sonoma County Gewürz.

Color: tan, with pink tinge

Aroma: clean, crisp, grapefruity, melon-like and reminiscent of Chenin Blanc

Flavors: very slight residual sugar, excellent varietal fruit and spice, rose-like, grapefruit, complex

Balance/Finish: medium-light body, crisp, extremely spicy finish

1981 Hacienda Wine Cellars, Sonoma County, Dry, 12.8% alcohol, 0.7% RS, 22.7° Brix, 0.77 TA

Before the unveiling:

Dooley: It's not varietal, but it is rich and pleasant with a good feel in the mouth.

McCloskey: You wouldn't be disappointed if you had this with dinner.

After the unveiling:

MacRostie: I'm disappointed. I couldn't pick it out as ours, but I wouldn't give you two cents for the '81 vintage.

Magnani: I disagree. I think there are a lot of good '81s.

Martini: Good whites.

Color: straw

Aroma: distinctly Gewürz, bready, resinous, cherry popsicle

Flavors: dry, soft, slightly bitter

Balance/Finish: medium-full body, slightly flat, clean lemony finish

1982 Hacienda Wine Cellars, Sonoma County, Dry, 12.8% alcohol; 0.7% RS, 22.7° Brix at harvest, 0.84 TA (harvest), 0.70 TA (bottling), 3.34 pH

Before the unveiling:

Martini: This comes in there with the Amity, and I was looking at both of them as the St. Jean style.

Montero: This is a little more grapefruity.

Magnani: And a touch more residual sugar, and less pinking.

After the unveiling:

MacRostie: It was not pink when bottled.

Montero: Four or five months, it'll be gone.

MacRostie: These wines often ferment with lots of color, but the bentonite and yeast absorb the color, drop it out, and you're bottling a pale, straw-colored wine. But they do go through a little pinking in the bottle.

Martini: How much SO_2 do you use at the crusher?

MacRostie: 75 ppm, then nothing added until fermentation is complete. They do go through about 12 hours skin contact time.

Magnani: They pink some years, and some years they don't, off the same vineyard.

MacRostie: The '80 was blood red and scared me terribly.

Color: very pale with pink blush.

Aroma: light grapefruit, lemony, light rose petal, good spice

Flavors: clean, crisp, very dry

Balance/Finish: good balance, spicy finish

Comments: great potential

PROCESSING

DIEMME
presses-dejuicers-filters-lees filters
PIERALISI
centrifugal decanters
IMMA
centrifuges
COMES
lees filters-plate and frame filters
COMPLEAT WINEMAKER
syphon dosers
MEARELLI
horizontal plate presses
CINGANO
stemmer-crushers
EGRETIER
pomace pumps
SIPI
basket presses-stemmer crushers
NICOLINI
piston pumps
RAGAZZINI
piston pumps-pomace pumps
JABSCO
flexible impeller pumps
LADISH
centrifugal and rotary pumps
COMPLEAT WINEMAKER
custom pumps

BOTTLING

GAI
fillers-corkers-foil spinners
champagne bottling equipment
COMPLEAT WINEMAKER
washer purger
SUPER ERMETICA
SUPER CORONA
semi-automatic crown cappers

SIPI
fillers-corkers
COMEN
labelers
POTDEVIN
labelers
ROPP
machines

CORKS-CLOSURES-FOILS-PLASTIC CAPSULES-GLUE

WINERY SUPPLIES

ARROW AMERICAN OAK TANKS
COMPLEAT WINEMAKER TANK COOLING JACKETS
COMPLEAT WINEMAKER DESIGN S/S RACKING TUBES
COMPLEAT WINEMAKER DESIGN S/S SIGHT GLASSES
LADISH TRI-CLOVER FITTINGS
EVER-TITE FITTINGS
FLO-COUPLING FITTINGS
GENLINE WINERY HOSE
KANAFLEX WINERY HOSE
AMERICAN OPTICAL REFRACTOMETERS
CHEMDET TANK WASHERS
MALLIGAND TYPE EBULLIOMETERS
YEASTS
CHEMICALS
BUNGS
MISCELLANEOUS WINERY SUPPLIES

PRODUCTION AND PROCESSING MACHINERY AND EQUIPMENT
FOR THE WINE INDUSTRY

THE COMPLEAT WINEMAKER

1219 MAIN STREET
ST. HELENA, CA 94574
707-963-9681
TWX 510-746-6176

Circle No. 113 on Reader Service Card

1974 Louis Martini, California Mountain, 12.5% alcohol

Before the unveiling:

MacRostie: It's a much older wine than most of what we've had, and it's holding up quite nicely. It's totally dry and has a little Gewürz character still there. I think it is a very good example of aged Gewürz.

Nalle: If somebody's making this in California, they ought to stick with it. This is such a nice diversion from what we've been doing in the past. I'd have to guess it's a European wine. It has aged so well, and is so non-varietal that it's like an old Mosel, with that creamy, oval-type character. The mouth is a hair flat, but the nose is wonderfully complex.

After the unveiling:

Neel: Nothing on the label suggests bottle ageing. How do you address that from a marketing standpoint?

Martini: At the price we sell the wine for, they don't bottle age it anyhow. But we design the Gewürz, the Johannisberg, and the Chardonnay to age. That's our purpose, and that's what we say, but the press usually doesn't repeat what we say, because our price isn't high enough to make it a significant contribution to your cellar.

Neel: For Gewürz, are some years better than others for ageing?

Martini: Definitely. '74, '77 and '80 are good ageing years, '78 and '79 aren't.

McCloskey: '74 made big Cabernet. Did '74 also make bigger Gewürz?

Martini: What I find is that the most important thing is hitting it right at picking, to keep the acid up. The grapes are from the La Loma Vineyard in Carneros, Monte Rosso on top of the Mayacamas Mountains, and Los Vineros del Rio in the Russian River Valley. Now our Gewürz is predominantly from Los Vineros del Rio, about 80%. The clonal selection really makes our Gewürz. We started in '43, with the first separation in '52, the second in '62.

Nalle: What cooperage does it go into?

Martini: Usually older American oak casks or redwood. We like to limit the time in wood, maybe six months or so to get rid of the spritz and clean it up. As far as I'm concerned, all of the development of the Gewürz comes in the bottle.

MacRostie: Recently I've done some vertical tastings of Gewürz, going back to '76. One of the lessons we're learning is that Gewürz is an unsung wine as far as ageing goes. They don't fall apart as you'd expect from such a delicate young wine.

Martini: I usually find that Johannisberg and Gewürz go through an awkward stage about three or four years out, where that musky bottle bouquet just overwhelms the wine, and people think it's over the hill. Just sit down and wait a couple of years, and then it comes out like this.

Neel: Will a drier wine age better that one with 1 1/2 to 2% residual sugar?

MacRostie: I think the grapes are more important.

Magnani: Ours have always been fairly sweet, and they age beautifully for five years or so.

Color: deep golden

Aroma: rich, some botrytis, seems oaky, very fine bottle bouquet but non-varietal

Flavors: dry, banana, oak, vague muscat character, slightly oxidized, complex, soft non-varietal

Balance/Finish: quite viscous, slightly flat, warm finish

1980 Navarro, Mendocino, 12.7% alcohol, 0.6% RS

Dooley: Very strong Sonoma character, middle of the road wine.

Martini: So-so.

Magnani: There's a turpentine character that detracts from the Gewürz. Other than that there's nothing wrong with it.

Nalle: Our '80 turned into something like this, and that grassiness bothers me.

Magnani: It bothers me a little. It detracts from the spicy quality of the Gewürz. I don't think that would cause any problems in the market.

Color: pale straw

Aroma: fabulous well-developed varietal spice, intense lychee nut, slight oxidation, bready, slight turpentine

Flavors: slight residual sugar, grassy, more spritz than spice, peaches, vanilla

Balance/Finish: full body, low acid, overly alcoholic, hot finish with good spice

1981 Navarro, estate bottled, Dry, Mendocino County 2.8% alcohol, 0.6% RS

Painter: It's the sweetest of the bunch, off-dry, some varietal character, but also bready.

Montero: There's definitely a yeastiness.

McCloskey: There's also a rotten grape smell—a damaged, mechanical harvest smell.

Martini: There's also the beginning of bottle bouquet, an almost acetone, turpentine sort of thing. It is a classical stage in both Johannisbergs and Gewürz's in California. You don't get that in European wines.

Magnani: It may just be going through a stage, as some of them do. It seems like it's really young because it has a horrendous amount of yeasty character.

Nalle: It has an oxidized, hard-candy finish, not aldehydic, but like hard candy; maybe it's been saturated, racked a lot of times with carbon dioxide. It has that sweet-sour effect.

Martini: It is weak as Gewürz.

MacRostie: I didn't recognize it as varietal.

Magnani: It's balanced, but the nose is not typical.

Color: pale straw

Aroma: very light floral nose, pineapple, yeast, acetone background, no spice

Flavors: barely detectable residual sugar, apples

Balance/Finish: medium body, good balance, hard candy and spice in a finish of good length

1981 Domaine Weinbach, reserve Personelle, Theo Faller, Alsace, France, 12.5% alcohol

Before the unveiling:

Martini: That must have hit the bottle at 60 parts free sulphur.

MacRostie: It's Alsatian, and it's good wine. It's probably too much Gewürz character for most American palates. I think it's an interesting example of a certain kind of Gewürz.

Magnani: It's too oxidized.

Martini: When you get your sulphur that high it forms an almost meaty, garlicy character. That has nothing to do with the wine, that's bad processing. That's a faulted wine. I'd never buy a bottle.

Montero: I think the grapes were moldy.

Nalle: This wine shows the great potential of Gewürz. Gewürz is going to stay in that minor league category of ungreatness until we let it explode out into this wierdness.

Martini: I don't agree.

Nalle: It's high in SO_2, but I'd like to have this in my cellar, because in 5 more years it'll be a knockout. The '74 Martini was as close to this as any wine here today.

Circle No. 110 on Reader Service Card

Martini: I don't see a similarity whatsoever. This has so much sulphur, I can't smell wine under it. I find this a fault with a lot of European wines.
After the unveiling:
Nalle: I think we could sell this style in California. There are enough people around buying Alsatian Gewürz's who would buy it.
MacRostie: Doug, do you think yours is going to be like that?
Nalle: No, but I'd like to see how far we could go in that direction. That doesn't mean excessive sulphur in the bottle, but it does mean a little more benign neglect.
MacRostie: I think most of that wine is just due to the grapes. They give you something you don't get in California.
Martini: I've had some outstanding Alsatian wines, but this isn't one of them.
Color: deep green/gold
Aroma: soft, rich, buttery, some oxidation, high SO_2
Flavors: dry, exceptionally fine varietal character, good spice, classically Alsatian, complex but no fruit
Balance/Finish: oily texture, good balance—though a trace flat, spicy finish

OFF-DRY STYLE

1982 Chateau St. Jean, St. Jean Vineyards, Sonoma Valley, 12% alcohol, 23.1° Brix, 1.5% RS, 0.84 TA (harvest), 0.72 TA (bottling)

Before the unveiling:
Magnani: There is a cheesy character that really bothered me.
Painter: I get gym socks on the nose.
Montero: It's properly made, clean, with good muscat flavors.
After the unveiling:
There were some spirited and divergent comments, those who did not like the wine and others who found it acceptable. The subject of price came up, and it was generally acknowledged that there is a good deal of consumer resistance surfacing now, especially in the high priced range.
Color: no color
Aroma: cheesy, ammonia, candy and grapefruit, lychee nut
Flavors: grapefruit and spice, roses, slight residual sugar, lots of Gewürz character
Balance/Finish: nice acid, long tart finish

1982 Chateau St. Jean, Frank Johnson Vineyard, 10.7% alcohol, 21.7° Brix, 3.3 pH at harvest, 1.9% RS, 0.85 TA (harvest), 0.75 TA (bottling)

McCloskey: The 1982 St. Jean, 1982 Grand Cru, and 1982 Monterey Vineyard all seem a bit simple. I'm burned out on that sugar level. I'm just wondering if you harvest at higher sugar, the fruit goes out of line, and you end up with a flatter, less well-defined wine.
Martini: I agree. For a dry style, the most critical factor is picking time. From that, I have to extrapolate that you're really going to throw it out of whack if you pick at too high sugar.
Dooley: Bob, do you have experience in shriveling Gewürz berries? What do you think of that?
Magnani: I think you get more grassy characteristics at lower sugar levels, and more fruity, melony characteristics at higher sugar levels. We've been picking off the same ranch in the Alexander Valley since 1974, at every sugar level from 18° through 29° with botrytis in the vineyard. We've fermented it with skin contact time and no skin contact time. We pick it by the way it tastes, but never really below 22.5°, and most likely between 23° and 24°.
On the other hand, I've had some experience picking Joe Martin's grapes in the Sonoma Valley, a much cooler growing area, and his fruit is very intense and ripe to the taste at 21° or 22°, and consequently pinks a lot more than any of the other Gewürz's I have made (it might be a different clone). I feel it depends on where it's grown.
Incidentally, we don't like Gewürz without skin contact time, if it's from the Alexander Valley. It tends to be flat and dumb without skin time.
After the unveiling:
Dooley: Is there a market for this kind of wine? I find it extremely boring. I'm not the guy who's buying it, but to me it's neither fish nor fowl; it's not sweet enough to be a dessert wine, and it's too sweet to go with dinner. It's simple. It's good technology.
Magnani: I think all the wines in this flight coat my mouth better than all the wines in the dry flights.
MacRostie: Do you think the consumer still talks dry and drinks sweet?
Martini: Absolutely.
Magnani: None of our wines have been below 1.5% RS, and most have been between 2% and 2.5%, and we sell between 4 and 5,000 cases of Gewürz a year. For a winery our size, that's significant. I don't find anything wrong with this wine at all; it's clean, it's spicy.
Painter: It's just very young.
Weisl: The '81 St. Jeans were between 2 and 3% RS. They still sold, but to a different market.
Color: pale straw with pink hue
Aroma: grapefruity, herbaceous, high SO_2, smells like chlorine
Flavors: sweet, clean, spritzy, could be Riesling
Balance/Finish: crisp acidity, long crisp finish

1981 Felton-Empire, Maritime Series (Tepusquet Vineyards, Santa Barbara County), 10.5% alcohol, 20.5 ° Brix

Color: light tan
Aroma: flowery, spicy
Flavors: a little thin, good Gewürz character
Balance/Finish: a bit flat, tired, moderate finish, good structure

Will you be next?
Protect Your Wine Tanks and Vessels with CAL*VAC Rupture Discs!
The CAL*VAC® Rupture Disc pressure relief device prevents tank damage caused by vacuum or pressure buildup.
With the New B.D.I.® Alarm System**, an instant signal warns you when a rupture disc relieves a pressure or vacuum condition before harming your tank.
Protect your tank during:
• Process malfunction
• Liquid product withdrawal
• Steam or hot water cleaning
Contact C.D.C. for more information.
VACUUM PRESSURE FLOW
POSITIVE PRESSURE FLOW
CAL*VAC® Rupture Disc

Continental Disc Corporation

4103 Riverside NW, Kansas City, MO 64150 • (816) 587-8300 • TLX: 422-73

*U.S. and foreign patents issued **U.S. Patent #4 342 988

Local Representative:

WAGNER EQUIPMENT, Inc.

200 W. OHIO AVENUE, RICHMOND, CALIF. 94804
CALL: (415) 237-9054

Circle No. 112 on Reader Service Card

1980 Hinzerling, estate bottled, Yakima Valley, 12.2% alcohol, 10.15% RS, 22.1° Brix, 0.70 TA, 3.45 pH

Before the unveiling:

Martini: I thought it was non-descript, with a grassy note.

Magnani: I got that piney, tarry sort of characteristic in this wine that I don't particularly dislike. But I don't think it's a positive attribute in Gewürz.

Weisl: This has the essence of that lychee nut character. It struck me as honey-apricot, Riesling-like Gewürz, but that lychee character comes through.

Magnani: It's dry, it's got big body, it's a nice wine.

Martini: There is astringency in the finish.

Montero: Bitter finish.

Martini: Gewürz should have a slightly bitter finish to it.

After the unveiling:

Nalle: Great wine. I detected some wood in the finish.

MacRostie: Good wine, different kind of fruit. Very interesting.

Color: light straw

Aroma: piney, apricotty, varnishy, oxidized

Flavors: light body, dry, strong lychee nut character, riesling-like

Balance/Finish; thin, a little flat, alcoholic, astringent finish

1981 Hinzerling, Yakima Valley, Washington, 12.5% alcohol, 0.25% RS, 21.8° Brix, 0.65 TA, 3.25 pH

Martini: This seems to have a soapy quality.

Nalle: I call it chemical.

MacRostie: Cheesy.

Montero: The poorest wine of the flight.

Martini: I get the impression, looking at Oregon and Washington wines, that they're either trying to decide upon a style, or like Europe they have tremendous vintage variation.

Color: light straw

Aroma: apples, perfumey, spearmint, malo-lactic character

Flavors: light body, dry, soapy, bitter, austere, hints of anise

Balance/Finish: a little flat, high alcohol, bitter finish

1981 Joseph Phelps Vineyards, Napa Valley, 12.5% alcohol, 1.0% RS

Before the unveiling:

Montero: It shouldn't be in this class; it's not dry. It's real nutty and has some botrytis character.

Magnani: It's an older Gewürz, has an interesting combination of oxidation and Gewürz character. It's pretty sweet.

Montero: Did anyone get ethyl acetate?

Martini: I get a little bit of that turpentine character out of this, but I think that's a stage of ageing. Nice bouquet. Of all the wines we've had today, this has the nicest mouth texture. That's a really positive point for Gewürztraminer.

Nalle: How do you get it soft, without that salty, flat, high pH character?

MacRostie: Residual sugar.

Painter: This was the sweetest.

After the unveiling:

Clemens: It tastes a little older than it is.

Magnani: It's a little oxidized for being that old.

Color: deep straw

Aroma: rich, buttery, light lychee, some oak, some oxidation, slightly high SO_2, malo-lactic character

KnighTec, Inc.

• Design, assembly & installation of motor control panels.
• Engineering & design done on premises.
• Supplies available • Programmable controllers

11410 OLD REDWOOD HWY.
WINDSOR, CA 95492 / (707)433-6931

Knights' Electric, Inc.

• Electrical installation & maintenance
• Commercial, industrial, agricultural
• 24 hr. emergency service

WINERIES, a specialty

P.O. BOX 928, HEALDSBURG, CA 95448 / (707)433-6931

Circle No. 127 on Reader Service Card

Flavors: off-dry, almonds, citrusy, some muscat character, not much varietal spice

Balance/Finish: good balance, warm finish

1982 Joseph Phelps Vineyards, Napa Valley, 12% alcohol, 10.7% RS

Before the unveiling: This wine was unanimously faulted for extremely high SO_2.

After the unveiling:

Neel: It has only been in the bottle for three weeks.

Martini: That really throws it.

Magnani: I don't find the wine that off; it's high in SO_2, but it's pretty much right on, and considering that it's only been in the bottle three weeks...

MacRostie: It's got a little rubbery character to it, but I've seen that in a lot of Gewürzs, and I find it acceptable. I wouldn't want to see it in mine, but it's not that unacceptable.

Clemens: The SO_2 is so high, I can't get past it.

Nalle: It really bothers me, because once the SO_2 is in the bottle you've locked it up.

Color: pale straw

Aroma: light lychee nuts, rubbery, extremely high SO_2

Flavors: slight residual sugar, light lychee nuts

Balance/Finish: hot, thin, salty, harsh finish

1981 Grand Cru Vineyards, 12.8% alcohol, 2.4% RS, 24.0° Brix, 3.3 pH, 0.78 TA

Before the unveiling:

Magnani: I think this is my '81. It's very indicative of what happens when Gewürz has about a year of bottle age on it.

Martini: To me it has more of a late harvest character.

Dooley: It's really smoothing out. It's youth is no longer there.

Nalle: This is the most bitter Gewürz I've tasted all day, but I like that bitter snap.

Magnani: Some bitterness is okay if you have over 2% residual sugar.

Martini: The bitterness helps it match with food, because bitterness is one of the best wine ties across to food, even in dry ones.

After the unveiling:

Weisl: If you didn't know these were the same vineyard, would anyone here have guessed that the '81 and the '82 were from the same area?

Consensus: No way.

Magnani: It's the youth of the wine. You have more of that grapefruity characteristic when they're young, and when they age they develop more of these characteristics. The '82 will be very similar to the '81 when it's 12 months old.

MacRostie: The thing I'm picking up today, is that I like them when they're brand new, I don't like them so much when they're a year old, but with a couple more years they'll be even better. All of the one year old's seem awkward to me now. They seem to go through an awkward stage.

Color: green-gold

Aroma: late harvest, turpentine, strong tangerines, slightly burnt character

Flavors: full body, high residual sugar, appley, bitter

Balance/Finish: low acid, oily texture, warm bitter finish

1982 Grand Cru Vineyards, 1982 Garden Creek Ranch, Alexander Valley (tank sample), 12.8% alcohol, 2% RS, 0.8 TA, 3.18 pH

Before the unveiling:

Painter: I found it more interesting, higher sugar, a little more complex. Good acid, low pH.

Martini: This had some of the aromatic characteristics in the nose that 'light' wines have, with a green character at the end.

Magnani: I find it very clean, with a lot of Gewürz character. It's a young wine, but it's right on the nose for that kind of wine.

After the unveiling:

Magnani: It had 18 to 19 hours skin contact time. Some botrytis.

Martini: What is the acid?

Magnani: At harvest, the acid was 0.7, the pH was horrible, 3.4 to 3.5. Now the acid is about 0.8, and the pH about 3.18.

Dooley: How do you bring the acid up?

Magnani: We just bring it up with tartaric to 1.0, right off the bat. This has had no other acid corrections, but we'll probably give it about one pound of citric per thousand gallons before bottling.

Citric, with this much residual sugar, tends to give it a little bite in the mouth. It tends to go better than tartaric at 1% RS or over. Citric gives the wine a pleasant, lemony characteristic, softens the wine down and takes off the edges. If you want a hard finish in the wine, tartaric is what you should use.

Color: slightly cloudy straw

Aroma: spicy apples, wet wool, high SO_2, slight botrytis

Flavors: sweet, medium body, quite spicy, grapefruit, apricot, spritzy, good varietal definition
Balance/Finish: crisp acidity (some thought it slightly low), spicy finish

1982 The Monterey Vineyard, 11% alcohol, 2.25 RS, 0.81 TA

Before the unveiling:
Magnani: Flat, not enough spice in the nose for Gewürz.
Martini: It could just as well have been Johannisberg.
After the unveiling:
Clemens: Peterson blends in Grey Riesling and a tiny fraction of Gewürz juice, 3% or so.
MacRostie: It has a sweet-sour effect with a tartness that hides all the flavor.
Magnani: I think the acid has been over-corrected, and that gives it a sour characteristic
Color: Pale straw
Aroma: green melony nose, no spice, candy-like, moderate SO_2, some oxidation
Flavors: slightly sweet, oxidized candy, citrusy, tart
Balance/Finish: thin, sweet/sour finish

LATE-HARVEST STYLE

1981 Navarro, Sweet Late Harvest, Mendocino County, 10.9% alcohol, 6.9%RS, 24.9° Brix

Before the unveiling:
Painter: Very sweet, not balanced by acid, middle-of-the-road.
MacRostie: Not much flavor.
After the unveiling:
Montero: It had about 20% botrytis infection.
Nalle: It's not flat for a lot of people.
Magnani: I'd never have picked it for 6.9% residual. That's really a no-man's-land of sugar, not sweet enough for dessert, and not dry enough for anything else.
Color: slightly cloudy, straw
Aroma: clean Gewürz character, lychee, tropical fruit
Flavors: very sweet, some botrytis, orange blossoms
Balance/Finish: would benefit from more acid, some spritz

1979 Hinzerling, Individually Selected Clusters, Yakima Valley, 9.4% alcohol, 11.1% RS, 27.8° Brix, 0.78 TA

Before the unveiling:
Martini: We've all agreed on the adjective to describe this one: Roses.
Weisl: Down at this end of the table we thought it was mothballs.
Dooley: It's artificial.
Martini: I don't find this pleasant at all.
After the unveiling:
MacRostie: The more concentrated the sugar, the more neutral the varietal character.
Magnani: But you have to go to higher botrytized characteristics to overcome that potent Gewürz character, before botrytis becomes the dominating factor in the wine. We've experimented with grapes from the 28-29-30° Brix fruit, to 46-47-48° Brix fruit. We found that around 30° Brix it had the best balance between Gewürz character and botrytis character.
Color: deep straw
Aroma: strong rose character, mothballs, artificial
Flavors: quite sweet, full body, cinnamon, mint, lighter fluid
Balance/Finish: low acid, light finish

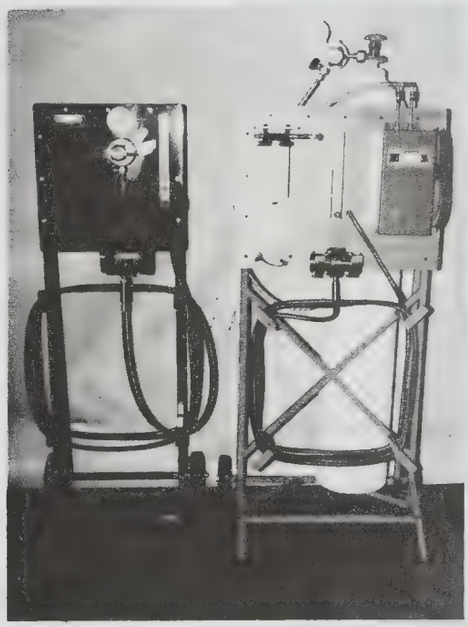
1981 Felton-Empire, Select Late Harvest, Tepusquet Vineyards, Santa Barbara County, 9.5% alcohol, 15% RS, 31° Brix

Before the unveiling:
The consensus is represented by Magnani: Pure botrytis, very high residual sugar.
After the unveiling:
Magnani: I'd like to see a little more Gewürz character coming through, but it's a magnificent wine. It has no faults.
Color: gold
Aroma: heavy botrytis, apricots and melons
Flavors: Beerenauslese level of sweetness, honey, mouthcoating, creamy, complex, low varietal definition, classic dessert wine
Balance/Finish:good level of acid, long finish

1981 Chateau St. Jean, Late Harvest, Robert Young Vineyard, Alexander Valley, 8.9% alcohol, 10% RS, 26.8° Brix, 0.9 TA (harvest), 0.87 TA (bottling).

Before the unveiling:
Martini: For a late harvest style, I think this is best of class today. It's complex, with really nice balance of all the components.
Nalle: This has got to be Alsatian.
MacRostie: The essence of Gewürz. This is more recognizably Gewürz than the Felton-Empire. But they're both beautiful wines.
After the unveiling:
Magnani: I don't think there was much botrytis in this wine, there isn't much honey botrytis character. I think it was made from dehydrated, high sugar fruit.
Color: deep yellow-gold, spritzy appearance
Aroma: jasmine, spicy, piney, light apricots
Flavors: Beerenauslese sweet, only light botrytis, intense Gewürz character
Balance/Finish: smooth, oily, very good acid, long complex finish with slight bitterness

SPARGERS • FLOWMETERS • SO_2 INJECTION SYSTEMS • POSITIVE PRESSURE INERTING SYSTEMS • MUST SEPARATORS • AND ALL YOUR EQUIPMENT NEEDS FOR N_2, CO_2, AND SO_2 APPLICATIONS



Portable Sparging System (L)
Portable Self-contained SO_2 Injector System (R)

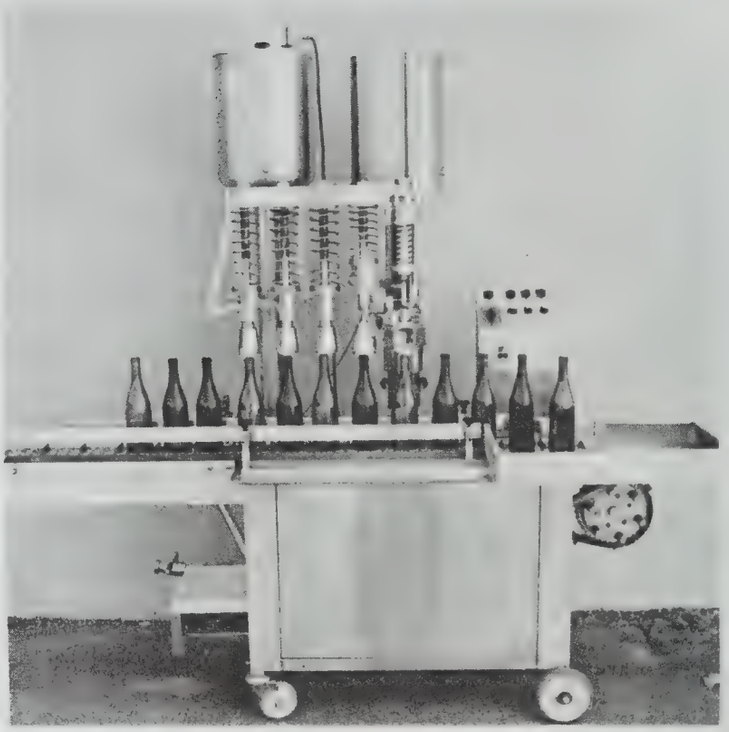
RELIABLE • EFFICIENT
CUSTOM MADE

THE BARRETT COMPANY
4325 W. Walnut Ave.
Visalia, California 93277
209-732-1806

Circle No. 107 on Reader Service Card

FILTER MEDIA & EQUIPMENT ADDITION
CRIVELLER COMPANY

Product information arrived after printing of the May/June 1983 PRACTICAL WINERY. Readers are invited to add this information to their Plate and Frame Filter Media Guide. Available are the following Galvani CKP filter pads by grade: coarse, V8; medium, V12; polishing, V16; and sterilizing, V20. Criveller also represents the Minimaster and Master inox models of plate and frame filters manufactured by AMF Padovan. For more information, contact Criveller Company, PO Box 162, Lewiston, NY 14092 or 6863 Lundy's Lane, Niagara Falls, Ontario, Canada (416) 357-2930.



SCOTT LABORATORIES, INC. introduced the Velo GEN 9 In-Line Filler Corker at the 1983 ASE meeting in Reno, Nevada. The unit can handle 900 750ml bottles/hour and the corker is complete with vacuum. Change parts are available for 375ml and 1.5ml bottles. The machine is available for purchase or lease-option. For more information, contact Scott Laboratories, Inc., PO Box 9167, San Rafael, CA 94912, (415) 457-8460.

Manufacturer/Distributor	Filter Model	Vessel Design	Leaf, Material of Construction	Pressure Vessel, Material of Construction	Pressure Vessel, A.S.M.E. Rating
AMF Padovan S.p.A. P.O. Box 9168 Richmond, VA 23227 Attn: Mr. E.T. Perry (804) 355-7961	ECOFILTER	vertical	ss	steel or ss	6 bars
	VIBROFILTER	horizontal	ss	steel or ss	6 bars
Budde & Westermann (DTR) 151 Forest St. Montclair, NJ 07042 (201) 744-5363	FILTROSTAR	vertical	ss	ss	120 psi
	FILTROMAT	horizontal	ss plates	ss	120 psi
The Compleat Winemaker (DTR) 1219 Main Street St. Helena, CA 94574 (707) 963-9681	DIEMME ADMIRAL	horizontal	ss	ss	150 psi
Criveller Co. (DTR for AMF Padovan) 6863 Lundy's Lane Niagara Falls, Ontario Canada (416) 357-2930	VICTORIA	horizontal	ss	304 or 316	8.5 bars

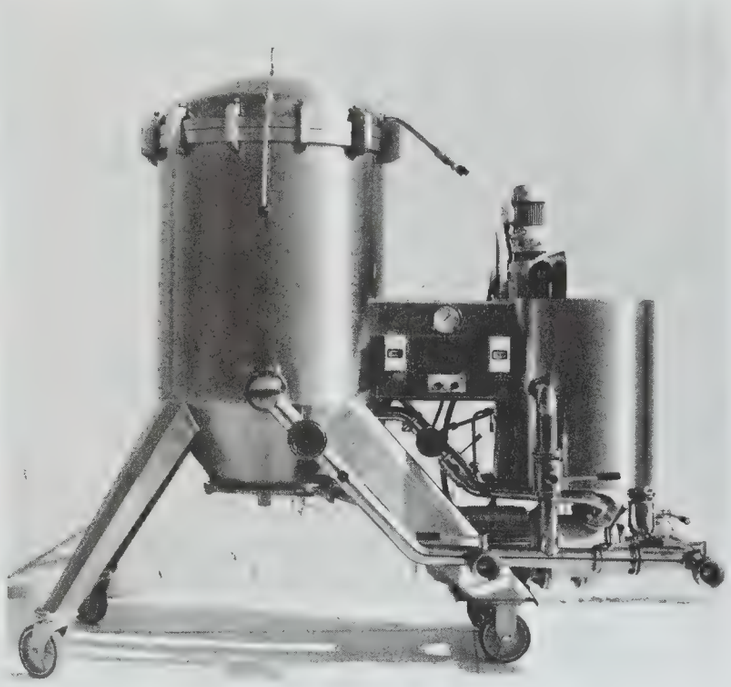
Pressure Leaf Filter Purchasing Guide

Filter Equipment: Part II

In the May/June 1983 PRACTICAL WINERY, Part I of the Filter Equipment and Media Purchasing Guide was published. Part I covered plate and frame filters and media. Part II (presented here) covers pressure leaf filters and media. Part III, to be published in the September/October 1983 PRATICAL WINERY, will cover membrane/cartridge filters and media. Please note: this is a purchasing guide, not a cross-reference chart!

Information presented here was generated with a questionnaire sent to manufacturers and/or distributors of filtration equipment and media asking for a listing of products offered to the wine industry. Product information is included **only** if the manufacturers and/or distributors responded to the questionnaire. Each was contacted to be sure they had received the questionnaire and were aware of the deadline for publication.

It should be noted that some surface areas included here are measured in square meters, while others are in square feet. Pressure vessel A.S.M.E. rating is also measured in either bars or p.s.i. The term 'rotating bed' refers to leaves which tilt from a horizontal to a vertical plane for cleaning.



Total Surface Area	Doser Included Doser Design	Pumps & Motors Included Pumps & Motors Available	Valve Design & Material of Construction	Discharge: Dry or Wet Cake	Discharge Method: Centrifugal Vibration Wash Rotating Bed Other	Unit is Stationary or Portable
5-100 m²	available	available	butterfly or ball valve (both in ss)	either	centrifugal	portable up to 30 m²
30-300 m²	available	available	butterfly or ball valve (both in ss)	either	vibration	stationary
150 m²	included diaphragm	available	ss	dry	vibration	either
19 m²	included diaphragm	available	ss	wet	centrifugal wash rotating bed	either
8-35 m²	piston dia.	included	butterfly or dia.	semi-dry	rotating bed	portable
3.3-18.3 m²	included, diaphragm	included	ss ball valves	Models VV1, 2, 3, and 4 are wet	wash and rotating bed	Models VV1, VV2, VV3 are portable; Model VV4 is stationary

Manufacturer/Distributor	Filter Model	Vessel Design	Leaf, Material of Construction	Pressure Vessel, Material of Construction	Pressure Vessel, A.S.M.E. Rating
fp Packaging, Inc. P.O. Box 881 S. San Francisco, CA 94080 (415) 871-5497 **Fleming-Potter Co., Inc.** 1028 SW Adams St. Peoria, IL 61602 (309) 676-2121	FILTER-O-MAT 65	vertical	304 ss	304 ss	depends on size
Industrial Filter & Pump Mfg. Co. (MFR) 5900 Ogden Ave. Cicero, IL 60650 (312) 656-7800 **Tec-Era Engineering Corp.** (DTR) P.O. Box 66707 Scotts Valley, CA 95066 (408) 438-1930	MODEL 122	horizontal	ss	ss	70 psi
Scott Laboratories, Inc. (DTR) P.O. Box 9167 San Rafael, CA 94912 (415) 457-8460; **Scott Laboratories, Inc.** NE, USA P.O. Box 237 Elmira, NY 14902 (607) 739-8818 **Scott Laboratories, Ltd.** 950 Brock Road South Pickering, Ontario L1W 2A1 (416) 839-9463; **Scott Laboratories, Ltd.** Western Canada 1824 Highway 97 South Kelowna, British Columbia (604) 769-5392	SCHENK ZHF-S(A)	horizontal	316 ss, Belgian weave screens	316 ss	16 bars
	SCHENK HK-S	horizontal	304 ss	316 ss	16 bars
	VELO	vertical	304 ss	316 ss	16 bars
SWK Machines, Inc. (MFR/DTR) 3095 Kerner Blvd., Suite G San Rafael, CA 94901	COSMOS	vertical (horizontal screens)	ss	ss	6 bars*
SWK Machines, Inc. 47 W. Steuben St. Bath, NY 14810 (607) 776-4193	SIRIUS	vertical (horizontal screens)	ss	ss	8 bars*
Valley Foundry & Machine Works (MFR/DTR) 2510 So. East Ave. Fresno, CA 93717 (209) 233-6135	NIAGRA	either	ss, includes Dutch weave	ss	50-200 psi
Vintners Supply Co. (DTR) 720 - 13th Street, Suite A Modesto, CA 95354 (209) 521-2841	DURIRON	either	316 ss, 304 ss supports*	304 ss	15 bars
Wine and The People (DTR) 907 University Ave. Berkeley, CA 94710 (415) 549-1266	UNIVERSAL*	vertical	ss	ss	147 psi

Total Surface Area	Doser Included Doser Design	Pumps & Motors Included Pumps & Motors Available	Valve Design & Material of Construction	Discharge: Dry or Wet Cake	Discharge Method: Centrifugal Vibration Wash Rotating Bed Other	Unit is Stationary or Portable
all sizes available	included: Filtrox-Dosimat 55/130	available	ball valves brass	dry	all available plus combinations	either
up to 2000 ft.^{2}	double diaphragm	included	custom order	either	vibration wash	stationary
12 m^2-100 m^2	included positive diaphragm pump	included	butterfly, slant & diaphragm; valves & fittings ss	dry	centrifugal	stationary
4 m^2 - 15 m^2	included positive diaphragm pump	included	butterfly, slant & diaphragm; valves & fittings ss	dry	rotating bed	portable
1.7 - 50 m^2	included*	included	ss ball valves w/Teflon seals	depends on model*	vibration on dry cake models followed by internal wash, wash wet cake models	portable (std) stationary (avail)
1.0 - 8 m^2	infinitely variable diaphragm	included	ss butterfly	dry	wash	portable
10 - 80 m^2	infinitely variable piston	included	ss butterfly	dry	centrifugal	stationary
50 - 900 ft.^{2}	slurry tank, pump and system included	included*	ss or bronze ball, butterfly or diaphragm valves	either	vibration wash rotosluice	stationary (std)
15 - 1000 ft^2	included, diaphragm*	available	ss butterfly	either	vibration wash	either
3 m^2	tank w/agitator, diaphragm dosing pump	included	ss ball valves	dry	wash	portable

FOOTNOTES on page 58.

FOOTNOTES FOR PRESSURE LEAF PURCHASING GUIDE

Scott Laboratories, Inc.

VELO

Doser Included/Doser Design: Model Media 2 has back pressure venturi. All other models have diaphragm positive dosers.

Dischange, Dry or Wet Cake: Models M2, M4, and M6 are wet cake; Models E5, M5, E10, M10, E20, M20, M35 and M50 are dry cake.

SWK Machines, Inc.

COSMOS

Pressure Vessel A.S.M.E. Rating: 6 bars is operating pressure, 12 bar vessel optional.

SIRIUS

Pressure Vessel A.S.M.E. Rating: 8 bars is operating pressure.

Valley Foundry & Machine Works

NIAGRA

Pumps & Motors, Included or Available: Feed and slurry pumps, agitator, rotosluice, and carriage drive motors included.

Vintners Supply Co.

DURIRON

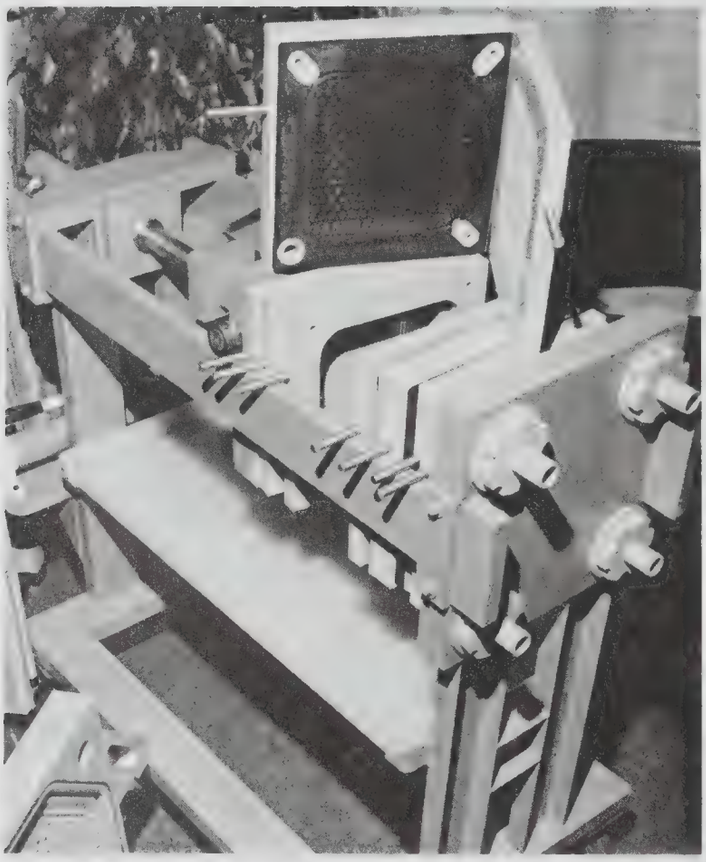
Leaf, Material of Construction: Laser welded screens available.

Doser Included, Doser Design: Complete, fully automated system available.

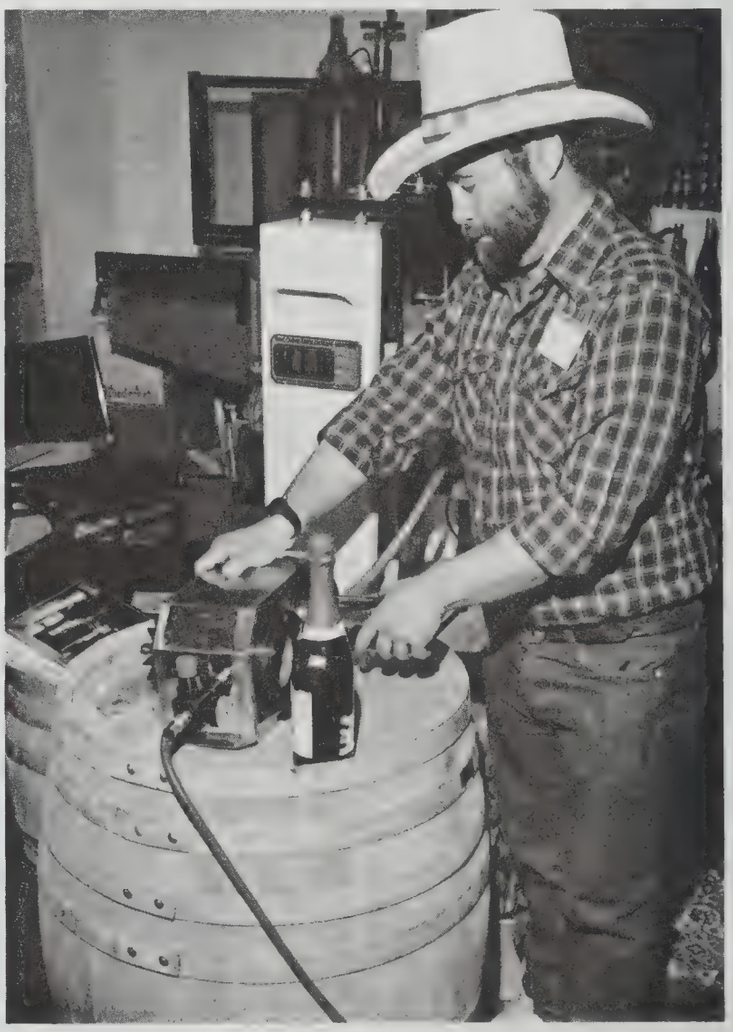
Wine and The People

UNIVERSAL

Filter Model: Combination pressure leaf filter and membrane filter with interchangeable manifold.



HOESCH INDUSTRIES, INC. introduced a Rubber Diaphragm Lees Filter at the 1983 ASE meeting in Reno, Nevada. The filter eliminates the need for expensive two-stage feed pumps, and substantially reduces the over-all cycle time. The high compression design provides extremely high yield per cycle. Chamber sizes available are 300, 1,000, and 1,200 mm; 800 mm will be available in late 1983. The variable volume diaphragm chambers provide cake thickness of 50 mm to 25 mm. 316 SS inlet/discharge pipes, valves, and pumps are available. The filter, made in the USA, can be ordered as manual, semi-automatic or automatic. For more information, contact Hoesch Standard Filter Division, PO Box 461, Wharton, NJ 07885, (201) 361-4700.



The M.E.B. SEMI-AUTOMATIC CHAMPAGNE CAPSULE CRIMPER was introduced at the 1983 ASE meeting in Reno, Nevada. The capsule crimper uses compressed air (4-6 atmospheres) with air consumption of 30 liters/minute and works without pedals. The machine is imported by Prospero's Inc., 134 Marble Ave., Pleasantville, NY 10570, (914) 769-8091. West coast distributor is Great Fermentations, 87 Larkspur, San Rafael, CA 94901, (415) 459-2520.

PUMPING PROBLEMS?
A COST EFFECTIVE SOLUTION
FOR THIS YEAR'S "CRUSH"

WILDEN PUMPS®

THE "ORIGINAL"

Air Operated Double Diaphragm Pump

Available
For Immediate Shipment

316 Stainless Steel/Neoprene or Teflon

Aluminum or PolyPro/Neoprene or Teflon

Models - M2-¾", M4-1¼", M8-2", M15-3"

PLACE YOUR ORDER NOW

THE PUMP THE WINE INDUSTRY DEMANDED

M-8
For Flows to 135 GPM

- Wine "Pumice"
- Bulk Tank Transfer
- Juice and finished wines
- CIP
- "Must" pumping
- Sludge pumping
- Dry powder pumping
- Product mix

WAGNER EQUIPMENT, Inc.

200 W. OHIO AVENUE, RICHMOND, CALIFORNIA 94804

Call (415) 237-9054

Circle No. 150 on Reader Service Card

INTRODUCING
THE PERFECT WAY TO SEAL FINE WINES.
NEW BOUCHON TAGE STOPPERS AND MACK-WAYNE SLEEVES.

It's the ideal combination. The uniform cellular structure and high quality of these man-made stoppers provide outstanding uniformity and consistency. There's no breathing, breakage or particles. You can decorate, date or print the same as with natural cork.

And Mack-Wayne wine sleeves have become a hallmark of packaging perfection. Unlike aluminum foil, these sleeves keep their original shape and your richly colored silk-screened or embossed message intact—even after the bottle is opened.

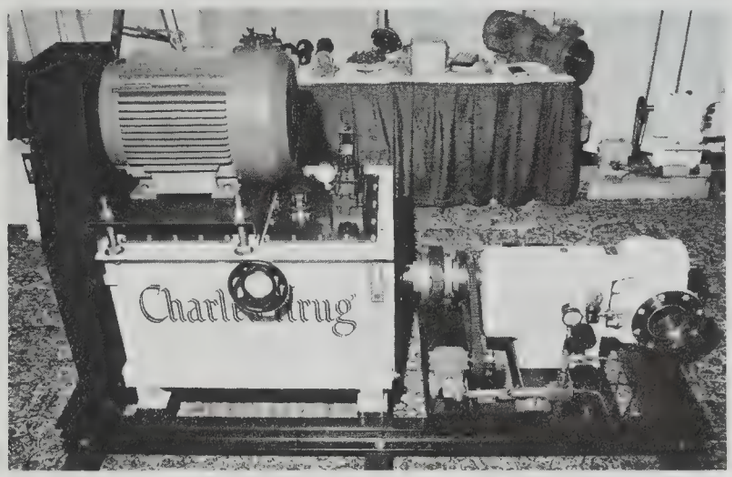
BOUCHON TAGE AND MACK-WAYNE SLEEVES—
THE SEALS OF PERFECTION.

MACK-WAYNE
CLOSURES
DIVISION OF THE WEST COMPANY

For literature and samples, contact Mack-Wayne Closures, P.O. Box 405, Wayne, NJ 07470, (201) 696-1212. Or 285 Sutton Place, P.O. Box 1493, Santa Rosa, CA 95401, (707) 584-9711.

Circle No. 130 on Reader Service Card

Hydralobe Pump for Crush and Bottling



Charles Krug Winery, St. Helena, CA., is installing two new must pump systems for the 1983 crush which provide for positive SO_2 and pectic enzyme injection and are manufactured by Western Process Design, Emeryville, CA.

The must pump combines features of a hydrostatic variable speed pressure compensated drive and the lobe type positive displacement design and tests show that it adds no solids thereby reducing clarification requirements.

The 'hydralobeTM must pump has pressure compensation for overload and jam protection. The system incorporates two small pressure driven pumps tied to the main must pump for enzyme and SO_2 injection proportional to must pump speed.

The hydraulic drive is incorporated and supplied with a control system which shows flow rate in gallons per minute (gpm), a totalizer in gpm and a preset counter which allows an operator to preset the amount to be pumped.

Tests show 40-60% fewer solids in drained juice when compared to piston and centrifugal pumps. 1982 crush tests included analyzing samples after the crusher after one pass through the pump and after 50 passes through the pump. After one pass, no solids were added. Other must pumps currently in use added between 7-14% solids on average. After 50 passes, the 'hydralobe' added between 0-1% solids. The 'hydralobe' also pumped whole leaves, stems and seeds with no damage, reducing tannin extraction.

Krug is replacing a 50 hp vane type centrifugal pump which added 7-11% solids to the juice and handled 65 tons/hour. Western's 40 hp 'hydralobe' will handle 0-150 tons/hour, add zero solids, and reduce energy requirements while doubling crusher capacity.

For SO_2 injection, a positive displacement piston-type variable stroke metering pump driven by the must pump is used. As long as the SO_2 remains liquid, it is not compressible and can be accurately injected into the discharge port of the must pump.

In order to insure the SO_2 remains liquid through the injection/metering system, several precautions have been taken. The SO_2 supply is pressurized with a 150 psi nitrogen blanket, thereby assuring liquid SO_2 to temperatures over 140°F. From the supply tank, SO_2 is injected into the suction of the metering pump. At the injection point of the must pump, a back pressure regulator is used to increase the discharge pressure to 200 psi thereby assuring a liquid metered flow.

Since the metering pump is driven by the must pump, flow is precisely controlled and the set proportion is maintained throughout the range of the must pump. An electric clutch is incorporated so the must pump can be run without SO_2 injection.

Another complete identical metering pump with a separate clutch is incorporated for the injection of enzyme into the suction of the must pump. Since the metering pumps are variable stroke, the dosage of SO_2 and pectin can be varied but, once set, will follow the flow of the must pump.

The first 'hydralobe' pump was installed in a bottling line application at Bronco Winery, Ceres, CA. Wine is being pumped through three stage millipore filters, at a pumping rate of 0-90 gpm at up to 130 psi, according to John Franzia. The pump can be deadheaded with a soft stop. The resulting lack of pulsation has increased filter cartridge life by 33%.

The pressure compensator allows the operator to set the maximum pressure the pump will develop and being a positive displacement pump, when a valve is closed the pump just stops and maintains the pre-set maximum pressure. This feature eliminates the need for return lines, relief valves and the excess agitation caused by deadheading a centrifugal pump.

More information is available from Western Process Design, 1525 Powell St., Emeryville, CA. 94608 (415)658-9661.

APPLIED
FOAM
TECHNOLOGISTS INC.

SPRAY POLYURETHANE
FOAM INSULATION

- TANKS
- ROOFS
- PROCESS EQUIPMENT

25 YEARS IN FOAM
8 YEARS WITH WINERIES

INSULATE AND SAVE

(415) 883-7110

19A Hamilton Drive
Novato, CA 94947

Circle No. 105 on Reader Service Card

Autolysis—Key Step at Vichon

Vichon Winery in Oakville, CA, since their first crush in 1980, have included in their white winemaking technique, leaving the wines on the yeast lees for up to six months.

Meticulous cellar treatment is given to Chardonnay and also Sauvignon Blanc and Semillon, the latter two varieties being blended after ageing to create "Chevrier Blanc".

The method achieves the style George Vierra and staff seek; the wood tannin and protein yeast lees interact and moderate the wood influence as the autolysis products of the fermentation lees add complexity and depth. The results are wines produced with subtle wood character and full fruit flavors.

The process begins with the following harvest criteria for Napa Valley fruit: Sauvignon Blanc with 21-22° Brix, pH 3.15-3.2, and acid over 1.0; Semillon with 22-23° Brix, pH 3.2-3.25 and acid between 0.7-0.85; and Chardonnay with 22.5-23.5° Brix (preferably 23.0 or less), pH of 3.2, and acid above 1.0. These grapes are picked over a four week span.

Grapes are crushed with 25 ppm SO_2 and the juice given 18 hours of skin contact, and pressed. Juice is settled overnight, racked, and inoculated while in stainless steel tanks. When the 50°F fermenting juice has reached 18° Brix, it is moved to puncheons. French White yeast was used in '80, but Epernay has been used since with no H_2S problems and no foaming.

The juice from all three grapes is pumped into 435 French Nevers puncheons in a room with a controlled temperature of 50°F. Fermentation temperatures peak at 65-68°F and every puncheon is monitored daily. At about 1° Brix, fermentation bungs are placed on the puncheons. Upon fermentation completion, the cellarworker tops the puncheon and raises the SO_2 level to 20 ppm free and seals the puncheon with a wood bung.

The potential of malolactic fermentation in Vichon white wines is minimized by the low ph levels and the constant monitoring of the puncheons and maintenance of SO_2 levels. Each puncheon is tasted weekly, mechanically stirred every two weeks, and topped monthly.

By JOHN McKAY,
Vichon

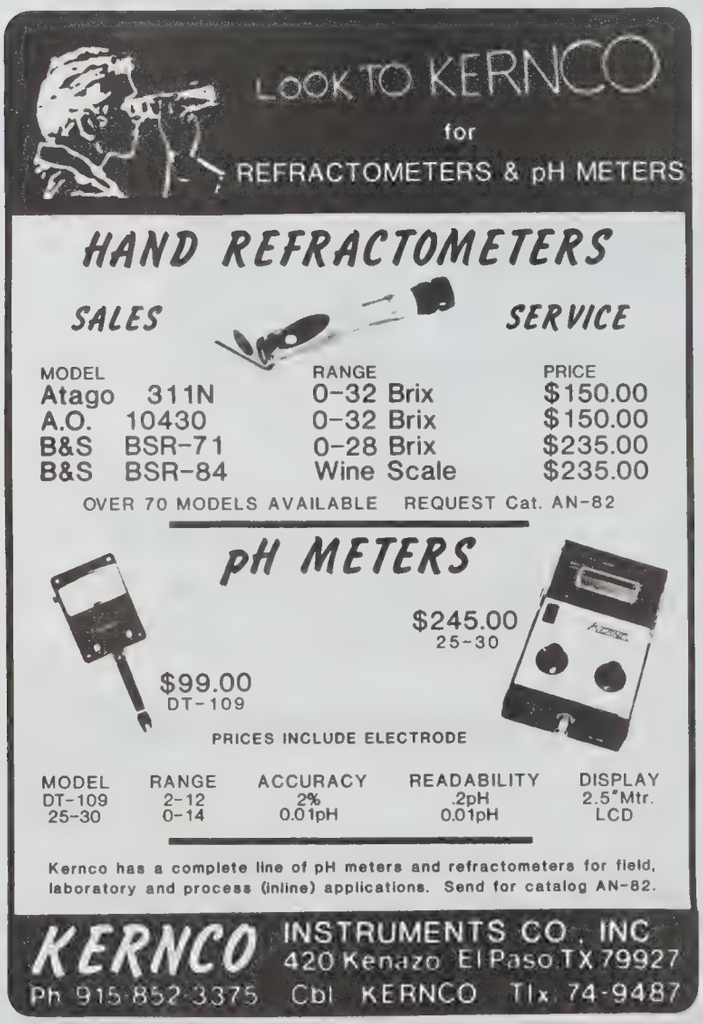
Yeasts are known primarily in winemaking for their role in the fermentation process on converting grape sugars to alcohol and carbon dioxide. However, even after the completion of the primary fermentation, these same yeasts can continue to have a beneficial influence on wine quality.

Leaving dry wines on their fermentation lees for extended periods of time is known to the French as ageing, *sur lie*. This centuries old practice used in the production of some of the world's greatest white wines has recently received considerable attention amongst enological researchers throughout the world. Currently, most research is being done on Champagne produced by the "methode champenoise", but the results of these studies should apply equally well to still wines left *sur lie*.

Our observations on the organoleptic changes of lees ageing for periods of up to nine months are that the wines develop greater complexity. This is exhibited by a conversion of the wines "fruity" smell to a more aromatic "vinous" aroma, the enhancement of the mouth feel by increasing the middle body, and finally giving one the impression of a more pungent youthfulness.

The changes in aromatic qualities are a result of the fundamental physical event that is known to be occurring, namely autolysis of the latent yeast cell while in the spent growth medium of the dry wine.

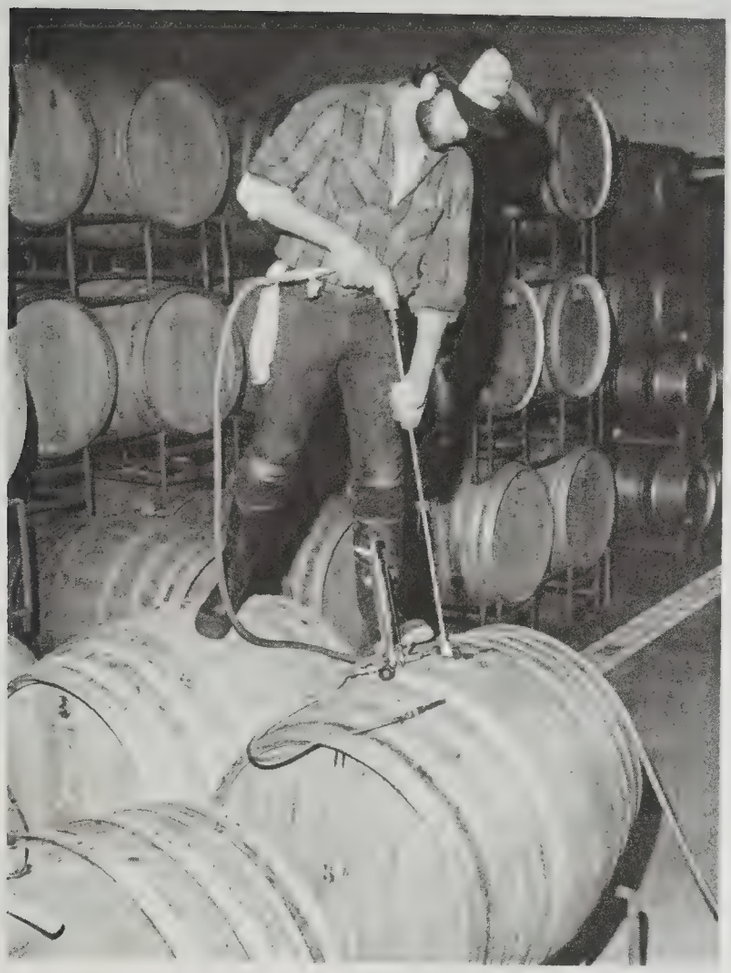
Autolysis begins on the yeast cells after several months of ageing by the action of intracellular proteolytic enzymes that


LOOK TO KERNCO
for
REFRACTOMETERS & pH METERS
HAND REFRACTOMETERS
SALES
SERVICE
MODEL RANGE PRICE
Atago 311N 0-32 Brix $150.00
A.O. 10430 0-32 Brix $150.00
B&S BSR-71 0-28 Brix $235.00
B&S BSR-84 Wine Scale $235.00
OVER 70 MODELS AVAILABLE REQUEST Cat. AN-82
pH METERS
$99.00
DT-109
$245.00
25-30
PRICES INCLUDE ELECTRODE
MODEL RANGE ACCURACY READABILITY DISPLAY
DT-109 2-12 2% .2pH 2.5"Mtr.
25-30 0-14 0.01pH 0.01pH LCD
Kernco has a complete line of pH meters and refractometers for field, laboratory and process (inline) applications. Send for catalog AN-82.
KERNCO INSTRUMENTS CO., INC
420 Kenazo El Paso TX 79927
Ph 915-852-3375 Cbl KERNCO Tlx 74-9487
Circle No. 125 on Reader Service Card

SONOMA VINEYARD

The famous King Ranch, 253 beautiful acres w/118 in vines. Wooded hillock overlooks lakes, perfect winery/chateau site. Near air strip. Asking $3,395,000. **Hendrick & McClurg (415) 453-2230** or **S. Giovannoni (707) 433-3347.**

Circle No. 121 on Reader Service Card



VICHON CELLARWORKER carries out routine of Liquid SO_2 check and stirring of lees.

hydrolize cytoplastic proteins with the consequent release of amino acids into the wine.

It is believed that the increase in amino acids themselves are not responsible for the observed organoleptic changes, but rather it is the subsequent transformation of these acids into higher aromatic alcohols that is most significant.

While amino acids are receiving the most attention, due probably to their abundance and accessibility as a research subject, other substances are also known to increase during the autolytic period.

Esters, ethers, fatty acids, terpenoids, alcohols and others have also been shown to increase in concentration. The mechanisms of their formation are not so much in question at present as is their qualitative and quantitative determination.

Current research is mostly concerned with the aromatic qualities of these yeast autolyzates as they affect the wines smell, however our observations have impressed us more with their effects upon taste and mouth feel.

Wines of moderate body after six months or more of lees ageing taste much fuller than their analytical numbers would indicate. This increase in middle body during autolysis gives one the impression of roundness without heaviness, but it is not known if any current studies are addressing the question as to why.

An unanticipated result of the autolytic activity that we have observed is the continuing freshness of the wines while in contact with the lees. Recent conversations with Burgundian winemakers has confirmed the effect as they feel fermentation lees "give life" to a still wine.

A possible explanation for this sustained youthfulness could be in the amount of yeast autolyzates expelled during ageing that are themselves oxidized during maturation reactions. This increased pool of oxidizable material helps as an antioxidant to the more commonly encountered wine constituents. An expected benefit from this phenomenon will be in producing wines of potentially longer ageing ability.

While much work is currently being done on the subject of yeast autolysis in dry wines, the questions raised by the present literature hint at vast possibilities of future research projects.

For Sale: WINE CELLAR. Large, walk-in, temperature controlled, insulated, double-walled, redwood exterior. May be disassembled for moving. Stores 55½ cases (669 bottles). 7½'x4'8"x6'. Comparable units sell new for $5000 & $400 installation. Asking $3000. Seller will assist w/moving & reassembly. Gary Aldrich (415) 681-0327 or 666-4129.

Circle No. 103 on Reader Service Card

Fast,
Neat,
Simple
to Operate
king LABEL GLUERS
The finest precision-made gluer for continuous or occasional usage
Precision-built to give years of efficient service with virtually no maintenance cost. No special skill required by an operator. Excellent glue-film control, large capacity, removable glue tray for easy cleaning.
CONVENIENT • EFFICIENT • ECONOMICAL
king Sales and Engineering Co.
4949 East 12th St.
Oakland, CA 94601
(415) 533-8350

Circle No. 126 on Reader Service Card

PRACTICAL WINERY LIBRARY

PRACTICAL WINERY is based on useful articles and comment, it does not become useless as the calendar pages turn. We have the pleasure of offering the following back issues at a cost of $5 per copy.

VOLUME 1, NO. 1
Calera Wine Co., CA • Carneros Creek Winery, CA • Sugar Determination Via the Rebline Method • Building a DeJuicer • Maintaining Refrigeration Efficiency

VOLUME I, NO. 2
Santa Cruz Mtn Vineyards, CA • Edmeades Vineyards, CA • SO_2 via Iodide-Iodate • Filtration, Depth, Crossflow • Polyethylene Tanks • Energy Saving at Robert Pecota Winery, CA

VOLUME I, NO. 3
SO_2 via Ripper Method and a Platinum Electrode • Lawrence Winery, CA • Tartrate Stability

VOLUME I, NO. 4
McDowell Valley Vineyards, CA • Enzymatic Wine Analysis • Acid Reduction

VOLUME I, NO. 5
Custom Cooperage • Pumps • Liquid SO_2 • History of Nouveau Production

VOLUME I, NO. 6
Rico's Winery, New Mexico • Fining Wines in 1888

VOLUME II, NO. 1
Ventana Vineyards, CA • Depth Filtration, Part I • Filter Media Cross Reference Chart • Wine Filtration • Centrifuges

VOLUME II, NO. 2
Moon Valley Circuits' Computers • Depth Filtration, Part II • Elastomers • Tank Presses

VOLUME II, NO. 3
Santino Winery, CA • Turner Winery, CA • Hydrogen Sulfide • Plastics • Wastewater Cleanup with Water Hyacinths

VOLUME II, NO. 4
Cordtz Cellars, CA • Fritz Cellars, CA • Arroyo Sonoma Winery, CA • Adler Fels Winery, CA

VOLUME II, NO. 5
Tank Press Advantages • 1981 California Nouveau Production • Mobile Bottling Lines • Fresno State • Computers in California Wineries • Marketing: How Practical the Small Winery?

VOLUME II, NO. 6
Corks • Wastewater Disposal • Malo-lactic Fermentation • Silicone Barrel Bungs • Kenwood Winery's(CA) Computer • Steel Barrel Racks • Oregon State University • Marketing with Ralph Montali

VOLUME III, NO. 1
Barrels • Winemaking Consultants • Chardonnay • Ridge Winery's (CA) Computer • Lees Filter-Press • Independent Laboratories • Marketing with Pat Dore

VOLUME III, NO. 2
Barrel Shaving • Sauvignon Blanc • Insulated Tank Benefits • Secondary Closure Buyer's Guide • Variable Capacity Tanks

VOLUME III, NO. 3
Roto-Tanks • Refrigeration • Skin Contact Temperature Variation • Pinot Blanc • Fenn Valley Vineyards's (MI) Computer • University of Missouri • Marketing with Alfred Barson • Kenwood Winery (CA) in Barrels & Wine

***VOLUME III, NO. 4
O'Enologist by Wayne Marcil • Malo-lactic Fermentation • Bottle Buyers' Guide • Bottle Manufacturing Quality • Used Bottle Supply • Fining Agents Buyer's Guide • Pinot Noir • Ahlstrom Redesigns Coq Cylinder • Tompkins Community College, NY • Barrels & Wine on Port

***VOLUME III, NO. 5
New Membrane Presses • Must Chillers • Sonoma Cutrer Controls Grape Temperature • French & American Barrel Phenolic Extraction • Chenin Blanc • Bottle Cleaner Option • Buena Vista(CA) Pigeage Fermenter • Theories & Uses of Fining Agents • Modified Screw Press Reduces Wear • Parsons Creek Winery(CA) Crushes and Presses in Vineyard • Frank Woods on Making a Winery Successful • Brooks Firestone on the Political Process • Barrels & Wine on Oak Ageing of Sauvignon Blanc

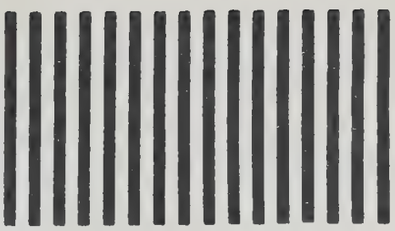
VOLUME III, NO. 6
Fisher Winery(CA) Architectural Award • Fruit Winemaking • AVF Research • Commercial Sterilization of Wine Corks • Merlot • Refrigeration: Ammonia or Freon • Malo-lactic Fermentation • CO_2 Bottling System • Cakebread(CA) Improves Vineyard Drainage • Barrels & Wine with Nils Venge

VOLUME IV, NO. 1
Concannon Winery(CA) • Schramsberg Vineyards(CA) Expansion Equipment Reduces Phenolics • Chardonnay • Acacia Winery(CA) • pH and TA, by Jim Vahl • Christian Bros. Winery(CA) Techniques • DE, What is it? • Sterile Filter Myths & Fables • Plate & Frame Filter Equipment and Media • French Red Winemaking • Turner Winery(CA) Improves Bag-in-Box Quality • Martini Vineyard(CA) Cabernet Sauvignon Apellation Comparison • Barrels & Wine on Used Cooperage

*****Story Reprints only are available @ $1.00 each.**

HELP
US
DELIVER
EVERY
ISSUE
OF THIS
MAGAZINE
TO
YOU.
FILL OUT
YOUR
SUBSCRIPTION
NOW!

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 1384 SAN RAFAEL, CA

POSTAGE WILL BE PAID BY ADDRESSEE

PRACTICAL WINERY
15 GRANDE PASEO
SAN RAFAEL, CA 94903

DON'T MISS
ONE ISSUE
OF

The Winemaking Review
PRACTICAL WINERY

FILL OUT THIS CARD
AND BECOME A
SUBSCRIBER
NOW!

FOR FREE ADDITIONAL INFORMATION

Mark the Reader Service Card Number found with each advertiser on the adjacent Reader Service Card and mail to receive further information.

	Product/Service	Page
101	Acme Equipment Corp.	10
102	Agri-Fab Industries, Inc.	67
103	Gary Aldridge	63
104	APM Inc.	72
105	Applied Foam Technologists, Inc.	61
106	American Wine Society	70
107	The Barrett Company	53
108	Boswell Company	12
109	Blake Printery	6
110	Central Steel & Tank Co.	50
111	Chemdet, Inc.	25
112	Continental Disc Corp.	51
113	The Compleat Winemaker	49
114	Custom Cooperage	47
115	Data Consulting Associates, Inc.	26
116	Datamasters Computer Services	13
117	Encorel	68
118	Enological Technical Service	27
119	Fowler Products Co., Inc.	29
120	Griffin-Rutgers Co., Inc.	15
121	Hendrick-McClurg	62
122	Hoesch Industries, Inc.	26
123	ITT Jabsco	15
124	JV Northwest Engineering	4
125	Kernco Instruments Co., Inc.	62
126	King Sales and Engineering Co.	63
127	Knight's Electric, Inc.	52
128	Frank Knorr, Inc.—Atlantic Welding	21
129	Mel Knox	28
130	Mack-Wayne Closures	60
131	Glen Martinez & Associates	68
132	Moffett Co., Inc.	16
133	Monitor Manufacturing	67
134	Napa Valley School of Cellaring	71
135	Gene Nelson	23
136	Northwest Wine Lab	22
137	Novo Laboratories, Inc.	2
138	Pacific Tank Co.	9
139	Pickering Winery Supply	14
140	Process Engineers, Inc.	27
141	Retech, Inc.	17
142	Riekes Container Co.	48
143	Ronchi Inc., USA	45
144	Scott Laboratories, Inc.	3
145	Spokane Metal Products	69
146	Temco, Inc.	43
147	Valley Foundry & Machine Works	5
148	James Vahl	11
149	Vinquiry	20
150	Wagner Equipment, Inc.	59
151	Wine East	19
152	Winetech	46

You may also request additional information from any company in Services For The Winemaker. Simply write company name in blank space provided on reader service card.

SUBSCRIPTION CARD

Annual Subscription $20.00/year
Outside the United States add $8.00/year postage or $20.00/year Air Mail

Mail To:
PRACTICAL WINERY
15 Grande Paseo
San Rafael, CA 94903
(415) 479-5819

NAME

ORGANIZATION

ADDRESS

CITY STATE ZIP

SIGNATURE

Check enclosed for $_____ for ____ subscriptions.

Bill me for ____ subscriptions. for ____ years.

READER SERVICE CARD

Advertisers will made additional information available to **PRACTICAL WINERY** readers. Circle the corresponding number of each company you wish to know more about:

Please type or print clearly your name and address. Please allow enough time for processing your requests.

101	102	103	104	105
106	107	108	109	110
111	112	113	114	115
116	117	118	119	120
121	122	123	124	125
126	127	128	129	130
131	132	133	134	135
136	137	138	139	140
141	142	143	144	145
146	147	148	149	150
151	152	153	154	155

Company Listed in **Services For The Winemaker**

PRACTICAL WINERY
code 83/5-6

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE

SERVICES FOR THE WINEMAKER

ADHESIVES

ADHESIVE PRODUCTS, INC., 520 Cleveland, Albany, CA 94710 (415) 526-7616.

H.B. FULLER CO., 6925 Central Ave., Newark, CA (415) 793-7300.

NATIONAL STARCH & CHEMICAL CORP., 742 Grayson St., Berkeley, CA 94710 (415) 841-4530.

ARCHITECTS & PLANNERS

JOHN PICCHI, A.I.A., ASSOCIATES, 340 Tesconi, "C", Santa Rosa, CA 95401 (707) 544-2060.

ARTISTS

CASEY HOBBS DEISGN, 1724 Jefferson St., Napa, CA 94558 (707) 253-8414.

COLONNA, CALDEWEY, FARRELL, 1335 Main St., St. Helena, CA 94574 (707) 963-2077.

DESIGN LAB, 7 Fourth Street, Suite 37, Petaluma, CA 94952 (707) 763-1448.

IMAGES UNLIMITED ADVERTISING, 202 Main St., St. Helena, CA 94574 (707) 963-2344.

IMAGINEZ, 41 Grant Ave., San Francisco, CA 94108 (415) 398-3203.

GLENN MARTINEZ & ASSOCIATES, P.O. Box 506, Santa Rosa, CA 95402 (707) 526-3198.

ROD RUTHEL GRAPHICS, P.O. Box 361, West Point, CA 95255 (209) 293-7905.

WORDS, INC. ADVERTISING, 6525 Washington St., Yountville, CA 94599 (707) 944-2532.

BAG-IN-BOX

SCHOLLE CORP., 19500 Jamboree Rd., Irvine, CA 92713 (714) 955-1750.

VINTNERS SUPPLY CO., 720 13th St., #A, Modesto, CA 95354 (209) 521-2841.

WRIGHTCEL, 152 Miramar Ave., San Rafael, CA 94901 (415) 459-2057.

BARREL BROKERS AND COOPERS

BARREL BUILDERS, 1085 Lodi Lane, St. Helena, CA 94574 (707) 963-7914.

COOPERAGE CLASSICS, 6229 Gold Dust Dr., Kelseyville, CA 95451 (707) 279-8397.

CUSTOM COOPERAGE, 1194 Maple Lane, Calistoga, CA 94515 (707) 942-6902.

S. DEBELLA BARREL CO., 1176 Harrison St., San Francisco, CA 94103 (415) 861-1700.

DEMPTOS COOPERAGE, 849 Jackson St., Napa, CA 94559 (707) 257-2628.

MEL KNOX, Barrel Broker, 1229 Third Ave., San Francisco, CA 94122 (415) 661-3413.

LES TONNELLERIES de BOURGOGNE, 2, rue de Bellevue, 21200 Beaune, France.

MOFFETT CO., INC., 6985 Via Del Oro A-5, San Jose, CA 95119 (408) 578-4910.

OAK BARREL WINECRAFT, 1201 University Ave., Berkeley, CA (415) 849-0400.

STEFANICH, 110 Freelon St., San Francisco, CA 94107 (415) 974-5526.

ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, N.J. 08215 (609) 965-0074.

TONNELLERIE FRANCAISE, P.O. Box 798, Calistoga, CA 94515 (707) 942-9301.

TONNELLERIE MERCIER, B.P. 16300, Barbezieux, France.

TONNELLERIE SIRUGUE, (U.S. Rep.) 305 San Anselmo Ave., #316, San Anselmo, CA 94960 (415) 457-3955.

UNIVERSAL BARREL CORP., P.O. Box 19048, Louisville, KY 40219 (502) 366-4563.

BARREL BUNGS

BARREL BUILDERS, 1085 Lodi Lane, St. Helena, CA 94574 (707) 963-7914.

BOSWELL COMPANY, 305 San Anselmo Ave., #316, San Anselmo, CA 94960 (415) 457-3955.

CUSTOM COOPERAGE, 1194 Maple Lane, Calistoga, CA 94515 (707) 942-6902.

S. DEBELLA BARREL CO., 1176 Harrison St., San Francisco, CA 94103 (415) 861-1700.

NAPA VALLEY COOPERAGE CO., 849 Jackson St., Napa, CA 94559 (707) 253-7060.

GENE K. NELSON, 12786 Old Redwood Highway, Healdsburg, CA 95448 (707) 433-5138.

UNIVERSAL BARREL CORP., P.O. Box 19048, Louisville, KY 40219 (502) 366-4563.

BARREL PALLETS – STEEL (PORTABLE)

AGRI-FAB INDUSTRIES/VINEYARD SUPPLIES, P.O. Box 536, Lodi, CA 95241 (209) 334-3560.

GUADAGNI BROS. WELDING, 7410 Dry Creek Road, Healdsburg, CA 95448 (707) 433-1081.

OGLETREES, 1027 Pope St., St. Helena, CA 94574 (707) 963-3537.

VINTAGE INDUSTRIES, P.O. Box 8421, Emeryville, CA 94662 (415) 652-9136.

BARREL STORAGE RACKS (STATIONARY)

OGLETREES, 1027 Pope St., St. Helena, CA 94574 (707) 963-3537.

RACKSHELF, 907 Santa Fe, Fresno, CA 93721 (209) 486-8360.

WINERY EQUIPMENT SYSTEMS, P.O. Box 3361, Napa, CA 94558 (707) 257-1103.

BARREL SHAVING

BARREL BUILDERS, 1085 Lodi Lane, St. Helena, Ca 94574 (707) 963-7914.

CUSTOM COOPERAGE, 1194 Maple Lane, Calistoga, CA 94515 (707) 942-6902.

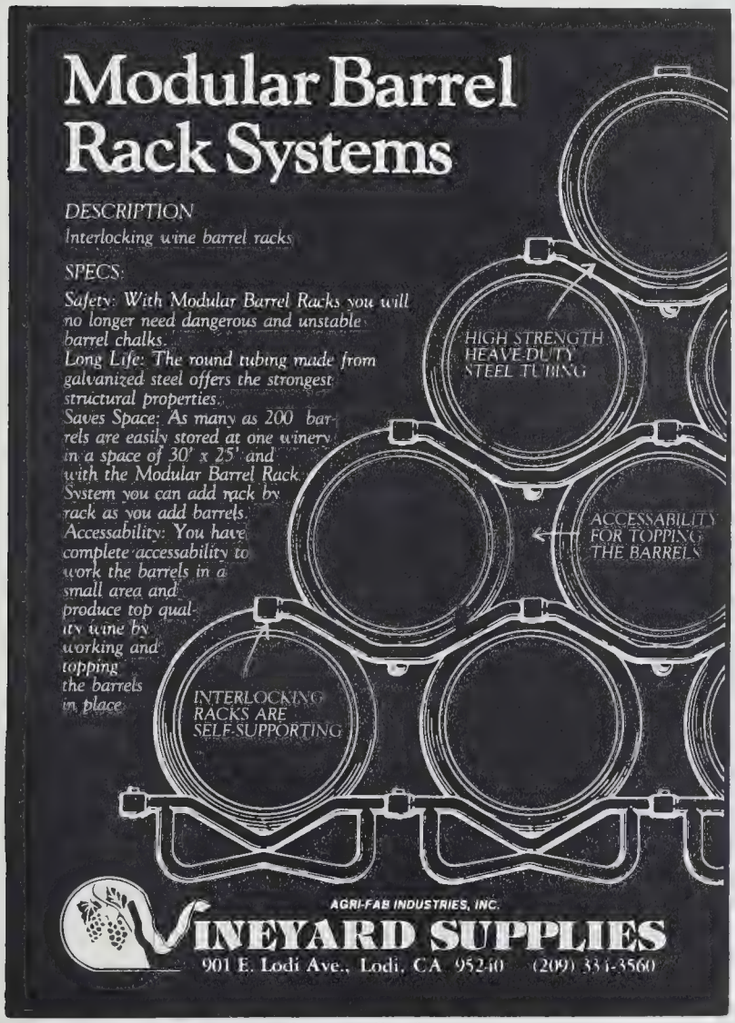
S. DEBELLA BARREL CO., 1176 Harrison St., San Francisco, CA 94103 (415) 861-1700.

BOTTLES

BARREL BUILDERS, 1085 Lodi Lane, St. Helena, CA 94574 (707) 963-7914 or (707) 545-1708.

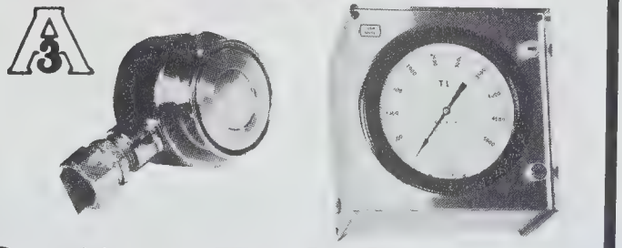
CALIFORNIA GLASS CO., 2098 Oakdale Ave., San Francisco, CA 94124 (415) 641-7700.

CALPAC CONTAINER CO., 1961 Alpine Way, Hayward, CA 94545 (415) 785-4520.


Modular Barrel Rack Systems
DESCRIPTION
Interlocking wine barrel racks
SPECS:
Safety: With Modular Barrel Racks you will no longer need dangerous and unstable barrel chalks.
Long Life: The round tubing made from galvanized steel offers the strongest structural properties.
Saves Space: As many as 200 barrels are easily stored at one winery in a space of 30' x 25' and with the Modular Barrel Rack System you can add rack by rack as you add barrels.
Accessability: You have complete accessability to work the barrels in a small area and produce top quality wine by working and topping the barrels in place.
HIGH STRENGTH HEAVE-DUTY STEEL TUBING
ACCESSABILITY FOR TOPPING THE BARRELS
INTERLOCKING RACKS ARE SELF-SUPPORTING
AGRI-FAB INDUSTRIES, INC.
VINEYARD SUPPLIES
901 E. Lodi Ave., Lodi, CA 95240 (209) 334-3560

Circle No. 102 on Reader Service Card

HOW MUCH WINE is in that vat?



Sanitary Tank Gauging weighs liquid–not foam

Designed for continuous inventory of insulated and single shell stainless steel wine vats. Can be CIP cleaned in place. *Sanitary level sensor* is placed in bottom of tank. Inside, a *stainless steel diaphragm*, authorized by 3-A, won't harden or rupture due to daily cleaning, senses content's hydrostatic pressure. Signal is sent pneumatically to local or remote *circular scale gauge.* Readout in gallons, or metric units. *Digital display optional.* All wetted parts 316 stainless steel, including diaphragm.

Write for Bulletin No. 801 for details

TANK MATE®

TANK MATE Division

MONITOR MANUFACTURING

P.O. Drawer AL • Elburn, IL 60119 • 312/365-9403 • Telex 72-0437

Circle No. 133 on Reader Service Card

DEMPTOS GLASS CO., 849 Jackson St., Napa, CA 94559 (707) 657-2628.
ENVIRONMENTAL CONTAINER REUSE, 5951 Doyle St., Emeryville, CA 94608 (415) 652-6565.
GLASS CONTAINER CORP., 22340 Hathaway Ave., Hayward, CA 94544 (415) 581-1700.
RIEKES CONTAINER CO., 1410 Sixty-fourth St., Emeryville, CA 94608 (415) 653-9474.
SEATTLE RECYCLING INC., 5718 Empire Way South, Seattle, WA 98118 (206) 723-2050.
TONNELLERIE FRANCAISE, 1401 Tubbs Lane, Calistoga, CA 94515 (707) 942-9301.
VERRERIES DE PUY-DE-DOME (Mel Knox), 1229 Third Ave., SF, CA 94122 (415) 661-3413.

BOTTLE WASHING & STERILIZATION
ENCORE, 5951 Doyle St., Emeryville, CA 94608 (415) 652-6565.

BOTTLING MACHINERY
BINER ELLISON MANUFACTURING CO., 1101 North Main St., Los Angeles, CA 90012 (213) 225-8162.
BREWERS & BOTTLERS EQUIP. CORP., P.O. Box 1530, Tampa, FL 33601 (813) 228-7888.
BUDDE & WESTERMANN, P.O. Box 177, Montclair, NJ 07042 (201) 744-5363.
THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.
ENOTECH CORP., P.O. Box 576, Palo Alto, CA 94302 (415) 858-1090.
FOWLER PRODUCTS COMPANY, INC., P.O. Box 1706, Athens, GA 30613 (404) 549-3300.
fp PACKAGING, INC., P.O. Box 881, S. San Francisco, CA 94080 (415) 871-5497.
HORIX MANUFACTURING CO., P.O. Box 9324, Pittsburgh, PA 15225 (412) 771-1111.
KING SALES & ENGINEERING CO., 4949 E. 12th St., Oakland, CA 94601 (415) 533-8350.
MEL KNOX, 1229 Third Ave., San Francisco, CA 94122 (415) 661-3413.
McBRADY ENGINEERING, INC., P.O. Box 204, E. Hazel Crest, IL 60429 (312) 798-6565.
MOFFETT CO., INC., 6985 Via Del Oro A-5, San Jose, CA 95119 (408) 578-4910.
OAK BARREL WINECRAFT, 1201 University Ave., Berkeley, CA 94702 (415) 849-0400.
OTTO SICK CORP., P.O. Box 1101, Palo Alto, CA 94302 (415) 858-1090.
PBM INTERNATIONAL, INC., 1229 Western St., Fairfield, CA 94533 (707) 426-6500.
PERRIER AMERICA CORP., 710 Rio Grande Dr.-Rivermont, Alpharetta, GA 30201 (404) 993-9896.
PNEUMATIC SCALE CORP., 65 Newport Ave., Quincy, MA 02171 (617) 328-6100.
PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA (415) 782-5122.
RONCHI INC. USA, 1107 Lunt Ave., Unit 5, Shaumberg, IL 60193 (312) 351-2366.
SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.
ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, N.J. 08215 (609) 965-0074.
SWK MACHINES, INC., 3095 Kerner Blvd., #G, San Rafael, CA 94901 (415) 457-5155.
2K PACKAGING ENTERPRISES, INC., 7914 SW Nimbus Ave., Beaverton, OR 97005 (503) 641-8990.
WINE AND THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.

CLEANING AGENTS
THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.
OAKITE PRODUCTS, INC., 4342 Virgusell Circle, Carmichael, CA 95608 (800) 352-8985.
PICKERING WINERY SUPPLY CO., 1300 22nd St., San Francisco, CA 94107 (415) 821-2400.
J. SCOTT Co., 175 Barneveld St., San Francisco, CA 94124 (415) 824-1741.
SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

COATINGS, PROTECTIVE MILDEWCIDES AND EPOXIES
BARREL BUILDERS, 1085 Lodi Lane, St. Helena, CA 94574 (707) 963-7914.
BISHOPRIC PRODUCTS CO., INC., 4413 Kings Run Dr., Cincinnati, OH 45232 (513) 641-0500.
BUDDE & WESTERMANN, P.O. Box 177, Montclair, NJ 07042 (201) 744-5363.
CUSTOM COOPERAGE, 1194 Maple Lane, Calistoga, CA 94515 (707) 942-6902.
fp PACKAGING, INC., P.O. Box 881, S. San Francisco, CA 94080 (415) 871-5497.
PICKERING WINERY SUPPLY CO., 1300 22nd St., San Francisco, CA 94107 (415) 821-2400.
MENSCO, INC., P.O. Box 4176, Fremont, CA 94539 (415) 651-9800.
OAK BARREL WINECRAFT, 1201 University Ave., Berkeley, CA 94702 (415) 849-0400.
SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.
J. SCOTT CO., 175 Barneveld St., San Francisco, CA 94124 (415) 824-1741.

CONVEYING EQUIPMENT
TEMCO, INC., P.O. Box 6039, Bellevue, WA 98007 (206) 747-1550.
UTILICON, P.O. Box 700, Forestville, CA 95436 (707) 823-6441.
VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.
WINERY EQUIPMENT SYSTEMS, P.O. Box 3361, Napa, CA 94558 (707) 257-1103.

CORKS (NATURAL)
APM INC., Benicia Ind. Park, Bldg. W-9, Bay 2, Benicia, CA 94510 (800) 862-7555.
BUDDE & WESTERMANN, P.O. Box 177, Montclair, NJ 07042 (201) 744-5363.
CALIFORNIA GLASS CO., 2098 Oakdale Ave., San Francisco, CA 94124 (415) 641-7700.
CORK SUPPLY INTERNATIONAL, INC., 14444 Griffith St., San Leandro, CA 94577 (415) 895-1470.

WINE BOTTLES
BOUGHT & SOLD

GLASS
STERILIZATION

NEW CARTONS
& DIVIDERS

ENCORE! (415) 652-6565
5951 Doyle Street
Emeryville, California 94608

Circle No. 117 on Reader Service Card

MARKETING SUPPORT SPECIALISTS

• LOGOS • LABEL AND BOTTLE DESIGN • BROCHURES •
• PACKAGING AND POINT OF PURCHASE DISPLAY • MAPS •
• WINE RELEASE SHEETS • PRESS KITS • SIGNAGE •
• TASTING AND TOURING MATERIALS • CORPORATE IDENTITY •

GM&A GLENN MARTINEZ AND ASSOCIATES
a graphic design firm

IF YOU WOULD LIKE TO SEE SAMPLES OR NEED MORE INFORMATION, CALL DAVID LEE AT (707) 526-3198.

421 HUMBOLDT STREET, SANTA ROSA, CALIFORNIA 95402 **(707) 526-3198**

Circle No. 131 on Reader Service Card

fp PACKAGING, INC., 229 Ryan Way, S. San Francisco, CA 94080 (415) 871-5497.

INTERNATIONAL CLOSURES & SUPPLIES CO., INC., 2997 Teagarden St., San Leandro, CA 94577 (415) 483-3750.

LaFITTE CORK & CAPSULE, INC., 1180 Hamilton Ct., Menlo Park, CA 94025 (415) 322-1838.

LATCHFORD PACKAGE CO., 1823 Egbert Ave., San Francisco, CA 94124 (415) 467-1440.

MOFFETT CO., INC., 6985 Via Del Oro, A-5, San Jose, CA 95119 (408) 578-4910.

PACE INDUSTRIES, INC., P.O. Box 5127, Ft. Lauderdale, FL 33310 (305) 731-8333; San Francisco, CA (415) 982-3703.

RIEKES CONTAINER CO., 1410 64th St., Emeryville, CA 94608 (415) 653-9474.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.

CORKS (PLASTIC)

LORAL PACKAGING, 520 South Ave., Garwood, New Jersey 07027 (201) 789-0900.

MACK-WAYNE CLOSURES, P.O. Box 405, Wayne, NJ 07470 (201) 696-1212; P.O. Box 1493, Santa Rosa, CA 95401 (707) 584-9711.

DEJUICERS

GEE MFG., INC., 1620 Todd St., Selma, CA 93662 (209) 896-3122

UTILICON, P.O. Box 700, Forestville, CA 95436 (707) 823-6441.

VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

DIATOMACEOUS EARTH

BENTLEY CHEMICAL CORP., 190 N. Canon Dr., Beverly Hills, CA 90210 (800) 252-7761.

EAGLE PICHER IND., INC., 580 Walnut St., Cincinnati, OH (513) 721-7010.

FINER FILTER PRODUCTS div. of CELLULO CO., 124 M St., Fresno, CA 93721 (209) 485-2692, 27-W North Ave., East, Cranford, NJ 07016 (201) 272-9400.

GREAT WESTERN CHEMICAL, 860 Wharf St., Richmond, CA 94804 (415) 235-4810, P.O. Box 1006, Fresno, CA 93714 (209) 485-4150.

GREFCO MINERALS, INC., 3435 W. Lomita Blvd., Torrance, CA 90509 (213) 517-0754.

MANVILLE PRODUCTS CORP., P.O. Box 5816, San Mateo, CA 94402 (415) 349-9500; P.O. Box 1544, Englewood Cliffs, NJ 07632 (201) 894-1111.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

ELECTRICAL INSULATION

KNIGHTS' ELECTRIC, INC., P.O. Box 928, Healdsburg, CA 95448 (707) 433-6931.

ENZYMES

BENTLEY CHEMICAL CORP., 190 N. Canon Dr., Beverly Hills, CA 90210 (800) 252-7761.

FINER FILTER PRODUCTS div. of CELLULO CO., 124 M St., Fresno, CA 93721 (209) 485-2692, 27-W North Ave. East, Cranford, NJ 07016 (201) 272-9400.

GENENCOR, INC., Baron Steuben Place, Corning, NY 14831 (607) 974-4210.

GREAT WESTERN CHEMICAL, 860 Wharf St., Richmond, CA 94804 (415) 235-4810, P.O. Box 1006, Fresno, CA 93714 (209) 485-4150.

MILES LABORATORIES, INC., P.O. Box 932, Elkhart, IN 46515 (219) 262-7448.

NOVO LABORATORIES, INC., 59 Danbury Rd., Wilton, CN 06897 (203) 762-2401.

ROHM TECH INC., 10 East 40th St., New York, NY 11016 (212) 686-6166.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

FILTER EQUIPMENT

AMF CUNO MICROFILTRATION, 400 Research Pkwy., Meriden, CT 06450 (203) 237-5541.

AMF PADOVAN S.p.A., P.O. Box 9168, Richmond, VA 23227 (804) 355-7961 (E.T. Perry).

BREWERS & BOTTLERS EQUIP. CORP., P.O. Box 1530, Tampa, FL 33601 (813) 228-7888.

BUDDE & WESTERMANN, P.O. Box 177, Montclair, NJ 07042 (201) 744-5363.

THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.

CRIVELLER CO., 6863 Lundy's Lane, Niagara Falls, Ontario, Canada (416) 357-2930.

ENOTECH CORP., P.O. Box 576, Palo Alto, CA 94302 (415) 858-1090.

fp PACKAGING, INC., P.O. Box 881, S. San Francisco, CA 94080 (415) 871-5497.

INDUSTRIAL FILTER & PUMP MFG. CO., 5900 Ogden Ave., Cicero, IL 60650 (312) 656-7800.

MILLIPORE CORP., 448 Grandview Dr., S. San Francisco, CA 94080 (800) 632-2708 (CA); (800) 227-0234.

MOFFET CO., INC, 6985 Via Del Oro A-5, San Jose, CA 95119 (408) 578-4910.

NUCLEPORE CORP., 7035 Commerce Cir., Pleasanton, CA 94566 (415) 462-2230.

PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA 94545 (415) 782-5122.

RONCHI INC. USA, 1107 Lunt Ave., Unit 5, Schaumberg, IL 60193 (312) 351-2366.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.

SWK MACHINES, INC., 47 W. Steuben St., Bath, NY 14810 (607) 776-4193; 3095 Kerner Blvd., "G", San Rafael, CA 94901 (415) 457-5155

TEC-ERA ENGINEERING CORP., P.O. Box 66707, Scotts Valley, CA 95066 (408) 438-1930.

VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

VINTNERS SUPPLY CO., 720 13th St., #A, Modesto, CA 95354 (209) 521-2841.

WINE & THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.

FILTER MEDIA

AMF CUNO MICROFILTRATION, 400 Research Pkwy., Meriden, CT 06450 (203) 237-5541.

BUDDE & WESTERMANN, P.O. Box 177, Montclair, NJ 07042 (201) 744-5363.

CRIVELLER CO., 6863 Lundy's Lane, Niagara Falls, Ontario, Canada (416) 357-2930.

FINER FILTER PRODUCTS div. of CELLULO CO., 124 M St., Fresno, CA 93721 (209) 485-2692, 27-W North Ave. East, Cranford, NJ 07016 (201) 272-9400.

fp PACKAGING, INC., P.O. Box 881, S. San Francisco, CA 94080 (415) 871-5497.

GREAT WESTERN CHEMICAL, 860 Wharf St., Richmond, CA 94804 (415) 235-4810, P.O. Box 1006, Fresno, CA 93714 (209) 485-4150.

MILES LABORATORIES, INC., P.O. Box 932, Elkhart, IN 46515 (219) 262-7448.

MILLIPORE CORP., 448 Grandview Dr., S. San Francisco, CA 94080 (800) 632-2708 (CA); (800) 227-0234.

PALL TRINITY MICRO CORP., 77 Crescent Beach Rd., Glen Cove, NY 11542 (516) 759-1900.

PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA (415) 782-5122.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.

SWK MACHINES, INC., 47 W. Steuben St., Bath, NY 14810 (607) 776-4193, 3095 Kerner Blvd., "G", San Rafael, CA 94901 (415) 457-5155.

2K PACKAGING ENTERPRISES, INC., 7914 SW Nimbus Ave., Beaverton, OR 97005, 428 N. Buchanan Circle #2, Pacheco, CA 94553 (415) 676-8990.

WINE & THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.

FINING AGENTS

BENTLEY CHEMICAL CORP., 190 N. Canon Dr., Beverly Hills, CA 90210 (800) 252-7761.

CELLULO. See FINER FILTER PRODUCTS.

FINER FILTER PRODUCTS div. of CELLULO CO., 124 M St., Fresno, CA 93721 (209) 485-2692, 27-W North Ave., East, Cranford, NJ 07016 (201) 272-9400.

GAF CORP., 140 West 51st St., NY, NY 10020 (800) 526-4110, P.O. Box 16247, Irvine, CA 92713 (714) 641-3777.

GREAT WESTERN CHEMICAL, 860 Wharf St., Richmond, CA 94804 (415) 235-4810, P.O. Box 1006, Fresno, CA 93714 (209) 485-4150.

WINE & THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.

THE WINE LAB, 1200 Oak Ave., St. Helena, CA 94574 (707) 963-7903.

UNION CITY CHEMICALS, INC., P.O. Box 736, Union City, CA 94587 (415) 489-5050.

FITTINGS, STAINLESS STEEL

BILLINGTON WELDING, INC., P.O. Box 4204, Modesto, CA 95352 (209) 526-9312.

OUR TANKS HAVE GREAT TASTE

Our full line of fixed top and variable capacity wine tanks have impressed winemakers from coast to coast. Our quality control in manufacturing and competitive costs to customers are two reasons to call us for more information.

SPOKANE METAL PRODUCTS

P. O. Box 3621 • Spokane, WA 99220 • WA State 1-800-572-3709 • Outside WA State 1-800-541-3601

Circle No. 145 on Reader Service Card

CHERRY-BURRELL CORP., 2400 6th St., SW, Cedar Rapids, IA 52406 (800) 553-8867.

CSM METAL FABRICATING & ENGINEERING, 1800 S. San Pedro St., Los Angeles, CA 90015 (213) 748-7321.

THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.

FELDMEIER SANITARY PROCESSING EQUIP., CORP., P.O. Box 178, Salina Station, Syracuse, NY 13208 (315) 424-1904.

JV NORTHWEST ENGINEERING, 18088 SW Lower Boones Ferry Rd., Portland, OR 97223 (503) 684-1490.

PROCESS ENGINEERS, INC., 3329 Baumbert Ave., Hayward, CA 94545 (415) 782-5122.

SANTA ROSA STAINLESS STEEL CO., P.O. Box 518, Santa Rosa, CA 95402 (707) 544-7777.

VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

GRAPE HARVESTERS-MECHANICAL

UP-RIGHT HARVESTERS, 1775 Park St., Selma, CA 93662 (209) 896-5150.

HEAT EXCHANGERS

ALFA-LAVAL, INC., 2115 Linwood Ave., Fort Lee, NJ 07024 (201) 592-7800; 900 Larkspur Landing Circle #115, Larkspur, CA 94939 (415) 461-0950.

CHERRY-BURRELL CORP., 2400 6th St., SW, Cedar Rapids, IA 52406 (319) 399-3200.

CREPACO, INC., 8303 W. Higgins Rd., Chicago, IL 60631 (312) 693-4000; 16641 Valley View Ave., Cerritos, CA 90701 (213) 926-9700.

INDUSTRIAL REFRIGERATION & PROCESS PIPING, INC., P.O. Box 129, Healdsburg, CA 95448 (707) 433-9471.

THERMO SYSTEMS, INC., 1003 Commercial St., San Carlos, CA 94070 (415) 595-0665.

VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

INDUSTRIAL & SPECIALTY GASES

A-L WELDING PRODUCTS, INC., 3017-H Santa Rosa Ave., Santa Rosa, CA 95401 (707) 575-8654.

INSULATION (FOAM)

APPLIED FOAM TECHNOLOGISTS, INC., 19A Hamilton Dr., Novato, CA 94947 (415) 883-7110.

ION EXCHANGE EQUIPMENT

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

TEC-ERA ENGINEERING CORP., P.O. Box 66707, Scotts Valley, CA 95066 (408) 438-1930.

VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

LABEL CODING EQUIPMENT

GRIFFIN-RUTGERS CO., INC., P.O. Box 71, East Islip, NY 11730 (516) 277-1500.

LABEL GLUING EQUIPMENT

KING SALES AND ENGINEERING CO., 4949 East 12th St., Oakland, CA 94601 (415) 533-8350.

LABORATORIES

ENOLOGICAL TECHNICAL SERVICE, 1804 Main St., St. Helena, CA 94574 (707) 963-4806

FOREMOST-McKESSON RESEARCH CENTER, 6363 Clark Ave., Dublin, CA 94566 (415) 828-1440.

INTERNATIONAL WINE CONSULTANTS, 4218 Rosewold Ave., Royal Oak, MI 48073 (313) 549-6661.

NORTHWEST WINE LAB, 86 East Broadway, Suite 10, Eugene, OR 97401 (503) 683-1400.

PENN SHORE VINEYARDS, INC., 10225 E. Lake Rd., North East, PA 16428 (814) 725-8688.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

VINQUIRY, 301-D East Street, Healdsburg, CA 95448 (707) 433-8869.

THE WINE LAB, 1200 Oak Avenue, St. Helena, CA 94574 (707) 963-7903.

LEES FILTER-PRESS

BUDDE & WESTERMANN, P.O. Box 177, Montclair, New Jersey 07042 (201) 744-5363.

THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.

fp PACKAGING, INC., 229 Ryan Way, S. San Francisco, CA 94080 (415) 871-5497.

PROCESS ENGINEERING, INC., 3329 Baumberg Ave., Hayward, CA 94545 (415) 782-5122.

ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

SWK MACHINES, INC., 3095 Kerner Blvd., #G, San Rafael, CA 94901 (415) 457-5155.

MOBILE BOTTLING LINES

CHATEAU BOTTLERS, 26 Woodland Ave., San Rafael, CA 94901 (415) 454-8407.

WINE LINE, 1188 Vineyard Ave., Pleasanton, CA 94566 (415) 846-2163.

PRESSES

THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.

LIQUID EXTRACTION SYSTEMS, INC., 332 N. Halifax Dr., Omond Beach, FL 32074 (904) 673-5627.

MOFFETT CO., INC., 6985 Via del Oro, A-5, San Jose, CA 95119 (409) 578-4910.

PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA 94545 (415) 782-5122.

HUBERT C. STOLLENWERK INC., P.O. Box 314, Egg Harbor City, NJ 08215 (609) 965-0686.

ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.

SWK MACHINES, INC., 3095 Kerner Blvd., #G, San Rafael, CA 94901 (415) 457-5155.

VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Avenue, Fresno, CA 93717 (209) 233-6135.

WINE AND THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.

PROCESS CONTROL SYSTEMS

BARRETT CO., 4325 W. Walnut, Visalia, CA 93277 (209) 732-1806.

EXPO INSTRUMENTS, INC., 183-D Commercial Ave., Sunnyvale, CA 94086 (408) 245-8822.

MENSCO, INC., 3350 Scott Blvd., Bldg. 54, Santa Clara, CA 95051 (408) 727-1382.

MOON VALLEY CIRCUITS, 173 Leveroni Rd., Sonoma, CA 95476 (707) 996-4157.

PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA 94545 (415) 782-5122.

PUMPS

AHLSTROM MACHINERY INC., P.O. Box 74, Glens Falls, NY 12801 (518) 798-9541.

ALFA-LAVAL, INC., 2115 Linwood Ave., Fort Lee, NJ 07024 (201) 592-7800.

BUDDE & WESTERMANN, P.O. Box 177, Montclair, NJ 07042 (201) 744-5363.

CHERRY-BURRELL CORP., 2400 6th St., SW, Cedar Rapids, IA 52406 (800) 553-8867, (319) 399-3200.

THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.

CREPACO, INC., 8303 W. Higgins Rd., Chicago, IL 60631 (312) 693-4000; 16641 Valley View Ave., Cerritos, CA 90701 (213) 926-9700.

fp PACKAGING, INC., P.O. Box 881, S. San Francisco, CA 94080 (415) 871-5497.

ITT JABSCO, 1485 Dale Way, Costa Mesa, CA 92626 (714) 545-8251.

MOFFETT CO., INC., 6985 Via Del Oro A-5, San Jose, CA 95119 (408) 578-4910.

OAK BARREL WINECRAFT, 1201 University Ave., Berkeley, CA 94702 (415) 849-0400.

PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA 94545 (415) 782-5122.

SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

HUBERT C. STOLLENWERK INC., P.O. Box 314, Egg Harbor City, NJ 08215 (609) 965-0686.

ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.

SWK MACHINES, INC., 3095 Kerner Blvd., #G, San Rafael, CA 94901 (415) 457-5155.

TEC-ERA ENGINEERING CORP., P.O. Box 66707, Scotts Valley, CA 95066 (408) 438-1930.

VALLEY FOUNDRY & MACHINERY WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

WAGNER EQUIPMENT, INC. (WILDEN PUMPS), 200 W. Ohio Ave., Richmond, CA 94804 (415) 237-9054.

WESTEC, 195 Dry Creek Drive, Healdsburg, CA 95448 (707) 433-8829.

WILDEN PUMP & ENGINEERING CO., 22069 Van Buren St., Grand Terrace, CA 92324 (714) 783-0621.

WINE AND THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.

REAL ESTATE

HENDRICK & McCLURG, 1010 Sir Francis Drake Blvd., Kentfield, CA 94904 (415) 453-2230.

REFRIGERATION & COOLING

FELDMEIER SANITARY PROCESSING EQUIP. CORP., P.O. Box 178, Salina Station, Syracuse, NY 13208 (315) 424-1904.

HUSSMAN REFRIGERATION, INC., 2308 Zanker Rd., San Jose, CA 95131 (408) 946-1900.

INDUSTRIAL REFRIGERATION & PROCESS PIPING, INC., P.O. Box 129, Healdsburg, CA 95448 (707) 433-9471.

POWER REFRIGERATION CO., 3466 Arden Rd., Hayward, CA 94545 (415) 887-4105.

RETECH, INC., 133 Madera Ave., San Carlos, CA 94070 (415) 593-9593.

THERMO SYSTEMS, INC., 1003 Commercial St., San Carlos, CA 94070 (415) 595-0665.

SECONDARY CLOSURES

A.R. ZACHER CO., P.O. Box 1006, Fresno, CA 93714 (209) 485-4150.

ALUMINUM CAP SEAL CO., P.O. Box 835, Burlington, VT 05401, (802) 862-0698.

CALIFORNIA GLASS CO., 2098 Oakdale Ave., San Francisco, CA 94124 (415) 641-7700.

ENOTECH CORPORATION, P.O. Box 576, Palo Alto, CA 94302 (415) 858-1090.

fp PACKAGING, INC., P.O. Box 881, S. San Francisco, CA 94080 (415) 871-5497.

LaFITTE CORK & CAPSULE, INC., 1180 Hamilton Ct., Menlo Park, CA 94025 (415) 322-1838.

LATCHFORD PACKAGE CO., P.O. Box 24626, San Francisco, CA 94124 (415) 467-1440

MACK-WAYNE CLOSURES, P.O. Box 405, Wayne, NJ 07470 (201) 696-1212; P.O. Box 1493, Santa Rosa, CA 95401 (707) 584-9711.

MOFFETT CO., INC., 6985 Via Del Oro, A-5, San Jose, CA 95119 (408) 578-4910.

RAMONDIN USA, 1041 Edwards Rd., Burlingame, CA 94010 (415) 340-7225.

RIEKES CONTAINER CO., 1410 64th St., Emeryville, CA 94608 (405) 653-9474.

SCOTT LABORATORIES, 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.

2K PACKAGING ENTERPRISES, INC., 7914 SW Nimbus Ave., Beaverton, OR 97005 (503) 641-8990.

TANKS (METAL)

CENTRAL STEEL AND TANK CO., P.O. Box 569, Yakima, WA 98907 (509) 452-9143.

CSM METAL FABRICATING & ENGINEERING, 1800 S. San Pedro St., Los Angeles, CA 90015 (213) 748-7321.

DCI, INC., P.O. Box 1227, St. Cloud, MN 56302 (612) 252-8200.

FELDMEIER SANITARY PROCESSING EQUIP. CORP., P.O. Box 178, Salina Station, Syracuse, NY 13208 (315) 424-1904.

JV NORTHWEST ENGINEERING, 18088 SW Lower Boones Ferry Road, Portland, OR 97223 (503) 684-1490.

FRANK KNORR, INC., ATLANTIC WELDING, 600 W. Delilah Rd., Pleasantville, NJ 08232 (609) 641-1966.

PACIFIC TANK CO., 1200 Willow St., Fort Bragg, CA 95437 (707) 964-7121.

AMERICAN WINE SOCIETY 1967

The American Wine Society is a national, non-profit organization devoted to educating its members and the general public about all aspects of wine-production, use, and appreciation. The Society is independent and has no commercial affiliation.

Membership is open to any interested person; wine enthusiast, professional in the wine business, amateur winemaker — anyone who wants to learn more about wine.

Annual (calendar year) dues are $20.00 per individual or couple which includes the Society's quarterly Journal, Special Bulletins and much more.

For free brochure write to:

AMERICAN WINE SOCIETY, INC.
Dept.
3006 Latta Road
Rochester, N.Y. 14612
(716) 225-7613

Circle No. 106 on Reader Service Card

SANTA ROSA STAINLESS STEEL CO., P.O. Box 518, Santa Rosa, CA 95402 (707) 544-7777.
SPOKANE METAL PRODUCTS, P.O. Box 3621, Spokane, WA 99220 (509) 928-0720, (800) 541-3601.
HUBERT C. STOLLENWERK INC., P.O. Box 314, Egg Harbor City, NJ 08215 (609) 965-0686.
ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.
VALLEY FOUNDRY & MACHINERY WORKS, 2510 S. East Avenue, Fresno, CA 93717 (209) 233-6135.
ZERO MANUFACTURING CO., Washington, MO 63090 (314) 239-6721.

TANK CLEANING EQUIPMENT
CHEMDET, INC., 50 Sintsink Dr., East, Port Washington, NY 11050 (800) 645-1510, (516) 883-1510.
THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.
PICKERING WINERY SUPPLY, 1300 22nd St., San Francisco, CA 94017 (415) 821-2400.
SYBRON/GAMLEN, 121 S. Maple Ave., So. San Francisco, CA 94080 (415) 873-1750.
VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.
WESTEC, P.O. Box 129, Healdsburg, CA 95448 (707) 433-8829.

TANK MONITORING EQUIPMENT
EXPO INSTRUMENTS, INC., 183-D Commercial Ave., Sunnyvale, CA 94086 (408) 245-8822.
INDUSTRIAL REFRIGERATION & PROCESS PIPING, INC., P.O. Box 129, Healdsburg, CA 95448 (707) 433-9471.
MILLTRONICS, INC., 709 Stadium Dr. East, Arlington, TX 76011 (817) 277-3543.
MONITOR MANUFACTURING, P.O. Drawer AL, Elburn, IL 60119 (312) 365-9403.
PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA 94545 (415) 782-5122.
UNITED ELECTRIC CONTROLS CO., Watertown, MA 02172 (617) 926-1000; 7342 Orangethorpe #B123, Buena Park, CA 90621 (213) 402-8233.
VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

TANK VENTING EQUIPMENT
THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.
CONTINENTAL DISC CORP., 4103 Riverside NW, Kansas City, MO 64150 (816) 587-8300.

USED EQUIPMENT
BREWERS & BOTTLERS EQUIP. CORP., P.O. Box 1530, Tampa, FL 33601 (813) 228-7888.
JACO EQUIPMENT CORP., 3080 Main St., Buffalo, NY 14214 (716) 836-3755.
ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.

VALVES
ALFA-LAVAL, INC., 2115 Linwood Ave., Fort Lee, NJ 07024 (201) 592-7800; 900 Larkspur Landing Circle #115, Larkspur, CA 94939 (415) 461-0950.
CHERRY-BURRELL CORP., 2400 6th St. SW, Cedar Rapids, IA 52406 (319) 399-3200.
THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.
ITT GRINNELL VALVE CO., INC., DIA-FLO DIV., P.O. Box 6164, Lancaster, PA 17603 (717) 291-1901.
PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA (415) 782-5122.
SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.
ROBERT L. STOLLENWERK CO., P.O. Box 282, Egg Harbor, NJ 08215 (609) 965-0074.
SWK MACHINES, INC., 3095 Kerner Blvd. #G, San Rafael, CA 94901 (415) 457-5155.
VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.

VINEYARD PLANNING & MANAGEMENT
V&E CONSULTING & MANAGEMENT, Box 422, Oakville, CA 94562 (707) 944-2815.

WAREHOUSING
GROSKOPF WAREHOUSE, P.O. Box 128, Vineburg, CA 95487 (707) 938-4793, (707) 996-2113.

WINE ANALYSIS EQUIPMENT
BOEHRINGER, MANNHEIM DIAGNOSTICS, INC., 7941 Castleway Dr., Indianapolis, IN 46250 (800) 428-5433, (317) 849-9350.
CHEMTRIX, INC., 163 SW Freeman Ave., Hillsboro, OR 97123 (503) 648-1434.
THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.
GENERAL GLASSBLOWING CO., 1107 Ohio Ave., Richmond, CA 94804 (415) 232-9172.
GREAT WESTERN CHEMICAL, 860 Wharf St., Richmond, CA 94804 (415) 235-4810, P.O. Box 1006, Fresno, CA 93714 (209) 485-4150.
KERNCO INSTRUMENTS CO., INC., 420 Kenazo St., El Paso, TX 79927 (915) 852-3375.
SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.
WINE & THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.
THE WINE LAB, 1200 Oak Ave., St. Helena, CA 94574 (707) 963-7903.
ZAHM & NAGEL CO., INC., 74C Jewett Ave., Buffalo, NY 14214 (716) 833-1532.

WINE LABEL (GLUE) PRINTERS
CALISTOGA PRESS, 1316 Lincoln Ave., Calistoga, CA (707) 942-6033.
GORDON GRAPHICS, 15 Digital Drive, Ignacio, CA 94947 (415) 883-0455.
HERDELL PRINTING, INC., P.O. Box 72, St. Helena, CA 94574 (707) 963-3634.

WINE LABEL (GLUE) PRINTERS
(with artist/designers)
ABEL PRINTING, 821 Santa Rosa, Santa Rosa, CA 95404 (707) 545-3300.
BLAKE PRINTERY, 2222 Beebee St., San Luis Obispo, CA 93401 (805) 543-6843.
fp LABEL COMPANY, INC., 219 Ryan Way, S. San Francisco, CA 94080 (415) 873-9456.
NORTHWESTERN GRAPHICS, 1314 Petaluma Hill Rd., Santa Rosa, CA 95404 (707) 545-4010.

WINEMAKING – CONSULTANT
L.A. "BUD" BERG, P.O. Box 293, Rutherford, CA 94573 (707) 963-5435.
JAMES VAHL, 793 Stralla Court, St. Helena, CA 94574 (707) 963-5423.
BRUCE RECTOR, P.O. Box 235, Napa, CA 94559 (707) 253-7280.

WINERY COMPUTER SERVICES
DATAVINE, 3022 St. Helena Highway North, St. Helena, CA 94574 (707) 963-5261.
DATA CONSULTING ASSOCIATES, INC., 18000 Coleman Valley Road, Occidental, CA 95465 (707) 874-3067.
DATAMASTERS COMPUTER SERVICES, 2828 Walnut Avenue, Carmichael, CA 95608 (800) 952-5686, (916) 485-0159.
GULSON & ASSOCIATES, P.O. Box 146, Kenwood, CA 95452 (707) 883-6931.
PACIFIC DATA SYSTEMS, 701 Welch Road, Palo Alto, CA 94304 (415) 328-0736.

WINERY EQUIPMENT DESIGN & MANUFACTURE
AHLSTROM MACHINERY, INC., P.O. Box 74, Glen Falls, NY 12801 (518) 798-9541.
BARRETT CO., 4325 W. Walnut, Visalia, CA 93277 (209) 732-1806.
FABRICATED METALS, INC., 2401 Merced St., San Leandro, CA 94577 (415) 357-0220.
GEE MFG. INC., 1620 Todd St., Selma, CA 93662 (209) 896-3122.
GUADAGNI BROS. WELDING, 7410 Dry Creek Rd., Healdsburg, CA 95448 (707) 433-1081.
H.B. ENTERPRISES, 1250 Vineland Ave., St. Helena, CA 94574 (707) 963-7706.
K & K METAL CONSTRUCTION, 3416 Solano Ave., Napa, CA 94558 (707) 253-2113.
MOON VALLEY CIRCUITS, 173 Leveroni, Rd., Sonoma, CA 95476 (707) 996-4157.
PACIFIC TANK CO., 1200 Willow St., Fort Bragg, CA 95437 (707) 964-7121.
PROCESS ENGINEERS, INC., 3329 Baumberg Ave., Hayward, CA 94545 (415) 782-5122.
TEMCO, INC., P.O. Box 6039, Bellevue, WA 98007 (206) 747-1550.
UTILICON, P.O. Box 700, Forestville, CA 95436 (707) 823-6441.
VALLEY FOUNDRY & MACHINE WORKS, 2510 S. East Ave., Fresno, CA 93717 (209) 233-6135.
WESTEC, 195 Dry Creek Drive, Healdsburg, CA 95448 (707) 433-8829.
WESTERN PROCESS DESIGN INC., 1525 Powell St., Emeryville, CA 94608 (415) 658-9661.
WINERY EQUIPMENT SYSTEMS, P.O. Box 3361, Napa, CA 94558 (707) 257-1103.

YEAST
CELLULO CO. See FINER FILTER PRODUCTS.
THE COMPLEAT WINEMAKER, 1219 Main St., St. Helena, CA 94574 (707) 963-9681.
CRIVELLER CO., 6863 Lundy's Lane, Niagara Falls, Ontario, Canada (416) 357-2930.
ENOLOGICAL TECHNICAL SERVICE, 1804 Main St., St. Helena, CA 94574 (707) 963-4806.
FINER FILTER PRODUCTS div. of CELLULO CO., 124 M St., Fresno, CA 93721 (209) 485-2692; 27-W North Ave. East, Cranford, NJ 07016 (201) 272-9400.
MOFFET CO., INC., 6985 Via Del Oro A-5, San Jose, CA 95119 (408) 578-4910.
SCOTT LABORATORIES, INC., 2955 Kerner Blvd., San Rafael, CA 94901 (415) 457-8460.
SWK MACHINES, INC., 3095 Kerner Blvd., #G, San Rafael, CA 94901 (415) 457-5155.
2K PACKAGING ENTERPRIES, INC., 7914 SW Nimbus Ave., Beaverton, OR 97005 (503) 641-8990.
UNIVERSAL FOODS CORP. (Red Star Yeast), P.O. Box 737, Milwaukee, WI 53201 (414) 271-6755.
VINQUIRY, 301-D East Street, Healdsburg, CA 95448 (707) 433-8869.
WINE AND THE PEOPLE, 907 University Ave., Berkeley, CA 94710 (415) 549-1266.
THE WINE LAB, 1200 Oak Avenue, St. Helena, CA 94574 (707) 963-7903.

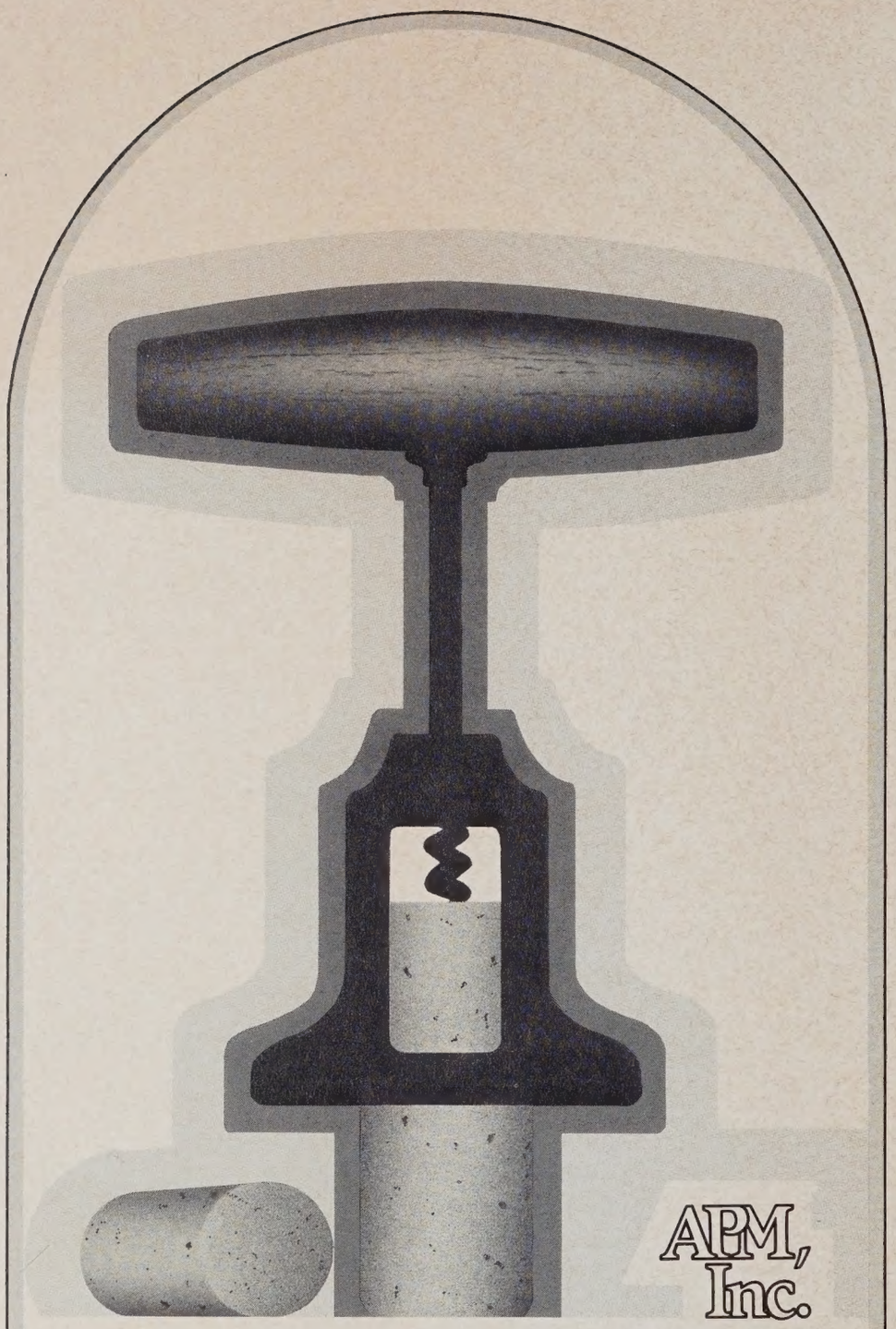
Napa Valley School of Cellaring
1983 WORKSHOPS

PROFESSIONAL TASTING July 30 - 31
ADVANCED LAB - ENZYMATIC ANALYSIS July 9
VITICULTURE FOR ENOLOGISTS July 16 MECHANICAL TROUBLE-SHOOTING July 23 - 24
THE HARVEST OF 1983 - CRUSH SEMINAR Aug 6 CRUSH TRAINING Aug 13 - 14

P.O. Box 235, Napa, CA 94559 (707) 253-7280

PRACTICAL WINERY
15 GRANDE PASEO
SAN RAFAEL, CA 94903

ADDRESS CORRECTION
REQUESTED



CORKS
WITHOUT COMPROMISE

WE DELIVER QUALITY · AND WE DELIVER ON TIME

APM, INC. · BENICIA INDUSTRIAL PARK · BLDG. W-9, BAY 2
BENICIA, CA 94510 · TOLL FREE (800) 862-7555

BULK RATE
U.S. POSTAGE
PAID
SAN RAFAEL, CA.
PERMIT NO. 303